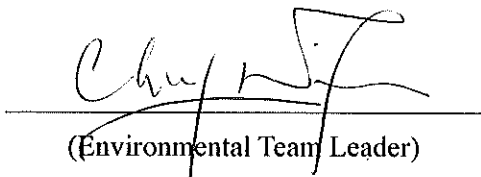


Dragages-Nishimatsu Joint Venture

Contract No. DC/2007/10
Design and Construction of Hong Kong
West Drainage Tunnel

Quarterly EM&A Report

January to March 2012
(version 2.0)

Certified By 
(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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CINOTECH CONSULTANTS LTD
Room 1710, Technology Park,
18 On Lai Street,
Shatin, NT, Hong Kong
Tel: (852) 2151 2083 Fax: (852) 3107 1388
Email: info@cinotech.com.hk

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EXECUTIVE SUMMARY

Introduction

1. This is the 16th Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the “Drainage Improvement in Northern Hong Kong Island – Hong Kong West Drainage Tunnel” (the Project). This summary report presents EM&A works performed in the period between January to March 2012.
2. The construction activities undertaken in the reporting quarter were:
 - Outfall- end wall dismantling, tunnel lining works at Western Portal and River channel connection, Tunnel lining works at Eastern Portal;
 - Dropshaft pilot hole and reaming at intake MA17 and CR1;
 - P5 dropshaft remedial measure works;
 - HDC works completed at Intake CR1 and on-going at Intake W8;
 - Permanent Intake structure works at MBD2, PFLR1, GL1, DG1, HR1, BR6, B2, W10, W3, W1, BR4, E5A, BR5, MA14, RR1, W0, M3, E7, MA17 and W5;
 - Dropshaft Lining Works at M3, BR4, PFLR1, MA14, W10, BR5, HR1 and DG1;
 - Permanent Adit Lining works at MBD2, THR2, E5B, MA15, TP5, E7, SM1, TP789, W5, M3, DG1, HR1, E5A, GL1, W0, CR1, W1, W3, B2, W8, BR4, MB16, THR2, MA14, TP4, PFLR1, BR5, P5, BR6 and RR1;
 - Still Chamber lining works at W5, E5B, E7, BR5, W10, DG1, M3, MA14, HR1, PFLR1, BR6, W3 and MA17;
 - Intake reinstatement works at THR2, TP5, MB16, MA15, E5B, TP789, TP4, HKU1, BR6 and B2;
 - Final Intake inspection done at THR2, TP5, MB16, MA15, E5B, TP789, TP4, HKU1, TP5, GL1 and SM1;
 - DDA submissions for Adit/Main Tunnel Intersection, Adits, Stilling Chambers and Turning Bays;
 - DDA submissions for temporary works, slope works and permanent works for Intake Structures;
 - DDA submissions for temporary and permanent works for Dropshafts;
 - DDA submissions for Adit/Main Tunnel optimized Q values and Adit/Main Tunnel Junction W0 re-design;
 - DDA submissions for permanent works for Intake P5 Structure;
 - Environmental impact monitoring;
 - Casting of dropshaft precast rings;
 - Still chamber enlargement at Adit RR1, BR6, P5 and W5;
 - Permanent Leaky cable system installation commenced (Anchor bolting);
 - Tunnel temporary facilities dismantling on-going; and
 - East/West Main Tunnel connection lining on-going.

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed regularly as stipulated in the Updated EM&A Manual and the results were checked and reviewed. Site audits were

conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

4. Proposal for Temporary Suspension of Water Quality Monitoring Western Portal was submitted on 15th September 2009 and approved by EPD on 30th October 2009. Marine water quality monitoring was temporary suspended starting from 31st October 2009 until there is marine-based construction activities resumed at the Western Portal. Marine-based construction activity has resumed and marine water quality monitoring has resumed on 5th March 2012 accordingly.
5. In order to assess the effectiveness of the implementation of water quality mitigation measures at Western Portal, site inspections/audits were conducted at least twice per week at Western Portal starting from November 2009.
6. Summary of the non-compliance of the reporting month is tabulated in Table I.

Table I Summary Table for Non-compliance Recorded in the Reporting Quarter

Parameter	Number of Exceedances due to the Project		Action Taken	Results of Action Taken
	Action Level	Limit Level		
Eastern Portal				
<i>January 2012</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	3	0	N.A.	N.A.
<i>February 2012</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	1	0	N.A.	N.A.
<i>March 2012</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
Western Portal				
<i>January 2012</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
<i>March 2012</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
Water Quality	0	0	N.A.	N.A.
Intake BR6				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
Noise	1	0	N.A.	N.A.
<i>March 2012</i>				
Noise	0	0	N.A.	N.A.
Intake DG1				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
Noise	0	0	N.A.	N.A.
<i>March 2012</i>				
Noise	0	0	N.A.	N.A.

Intake E5A				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
Noise	0	0	N.A.	N.A.
<i>March 2012</i>				
Noise	0	0	N.A.	N.A.
Intake E7				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
Noise	0	0	N.A.	N.A.
<i>March 2012</i>				
Noise	0	0	N.A.	N.A.
Intake MA14				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
Noise	0	0	N.A.	N.A.
<i>March 2012</i>				
Noise	0	0	N.A.	N.A.
Intake PFLR1				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
Noise	1	0	N.A.	N.A.
<i>March 2012</i>				
Noise	0	0	N.A.	N.A.
Intake RR1				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
Noise	0	0	N.A.	N.A.
<i>March 2012</i>				
Noise	0	0	N.A.	N.A.
Intake THR2				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
Noise	0	0	N.A.	N.A.
<i>March 2012</i>				
Noise	0	0	N.A.	N.A.

Intake W0				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
Noise	0	0	N.A.	N.A.
<i>March 2012</i>				
Noise	0	0	N.A.	N.A.
Intake W5				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
Ground Borne Noise	0		N.A.	N.A.
<i>February 2012</i>				
Noise	0	0	N.A.	N.A.
Ground Borne Noise	0		N.A.	N.A.
<i>March 2012</i>				
Noise	0	0	N.A.	N.A.
Ground Borne Noise	0		N.A.	N.A.
Intake W8				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
Noise	2	0	N.A.	N.A.
<i>March 2012</i>				
Noise	1	0	N.A.	N.A.
Intake P5				
<i>January 2012</i>				
Noise	0	0	N.A.	N.A.
<i>February 2012</i>				
Noise	0	0	N.A.	N.A.
<i>March 2012</i>				
Noise	0	0	N.A.	N.A.

*Air Quality**1-hour TSP Monitoring*

7. 1-hour TSP monitoring at 2 monitoring stations, AQ1 and AQ2, was conducted as scheduled in the reporting period. No Action/Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting quarter.

24-hour TSP Monitoring

8. 24-hr TSP monitoring at 2 monitoring station, AQ1 and AQ3, was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting quarter.

Construction Airborne Noise

9. Noise monitoring at 19 monitoring stations, at NC1, NC2, NC3, NC4, NC5, NC6, NC7, NC8, NC9, NC10, NC11, NC12, NC13, NC14, NC15a, NC16, NC17, NC18 and NC19 were conducted as schedule in the reporting period.

Eastern Portal

10. Four Action Level exceedances were recorded due to the complaints received on 9th, 16th, 27th January and 3rd February 2012 during the reporting period.

Western Portal

11. No Action/Limit Level exceedance was recorded during the reporting period.

Intake BR6

12. One Action Level exceedance was recorded due to the complaint received on 27th February 2012.

Intake DGI

13. No Action/Limit Level exceedance was recorded during the reporting period.

Intake E5A

14. No Action/Limit Level exceedance was recorded during the reporting period.

Intake E7

15. No Action/Limit Level exceedance was recorded during the reporting period.

Intake MA14

16. No Action/Limit Level exceedance was recorded during the reporting period.

Intake PFLR1

17. One Action Level exceedance was recorded due to the complaint received on 6th February 2012.

Intake RRI

18. No Action/Limit Level exceedance was recorded during the reporting period.

Intake THR2

19. No Action/Limit Level exceedance was recorded during the reporting period.

Intake W0

20. No Action/Limit Level exceedance was recorded during the reporting period.

Intake W5

21. No Action/Limit Level exceedance was recorded during the reporting period.

Intake W8

22. Three Action Level exceedances were recorded due to the complaint received on 13th, 17th February and 5th March 2012.

Intake P5

23. No Action/Limit Level exceedance was recorded during the reporting period.

Construction Ground Borne Noise

24. Construction Ground Borne Noise Monitoring at GNC3 was temporary suspended since 7th May 2009 as the ISS EastPoint Property Management Ltd. received an instruction from the Incorporated Owners of Aegean Terrace that we are not permitted to conduct any noise monitoring inside Aegean Terrace for the Project.
25. According to the approved EIA report, noise monitoring should be performed at NSR1a (i.e. Crane Court) when TBM is operating through the tunnel section between points A and B). Therefore, Ground borne noise monitoring has been conducted at Crane Court (GNC4) since 3rd June 2009 during the TBM operated.
26. Ground borne noise monitoring at GNC1 – True Light Middle School, GNC2 – The Legend and GNC4 – Crane Court were completed by end of August 2009 accordingly.
27. Ground borne noise monitoring at GNC5 was completed by end of November 2009.
28. Ground borne noise monitoring at GNC6 – French International School was completed by end of June 2010.
29. Ground borne noise monitoring at GNC7 – Hong Villa was completed by the end of November 2011.
30. Ground borne noise monitoring was conducted at GNC8 – Raimondi College in the reporting period. No exceedance was recorded.

Water Quality

31. Water quality monitoring was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded.

Environmental Licensing and Permitting

32. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, An Environmental Permit No. EP-272/2007 was issued on 26 April 2007 and Environmental Permit No. EP-272/2007/A was issue on 26 October 2007. Later, the further Environmental Permit (FEP-01/272/2007/A) and (FEP-01/272/2007/B) was issued on 28 January 2008 and 25 June 2009 to Dragages-Nishimatsu Joint Venture.
33. Registration of Chemical Waste Producer (License: 5213-148-D2393-02 for Eastern Portal and No. 5213-172-D2393-01 for Western Portal).
34. Water Discharge License (License No.: EP860/W10/XY0175 for Area of Mount Butler Office, EP860/W10/XY0177 for Eastern Portal, EP820/W9/XT086 and WT00005864-2010 for Western Portal, EP860/W10/XY0183 for Intake W0, WT00003372-2009 for Intake SM1, WT00003737-2009 for Intake MB16, WT00004126-2009 for Intake HKU1, WT00003738-2009 for THR2, WT00004270-2009 for PFLR1, WT00004806-2009 for Intake E7, WT00004808-2009 for MBD2, WT00004885-2009 for Intake RR1, WT00005135-2009 for Intake W10, WT00005357-2009 for Intake W5, WT00005374-2009 for Intake P5, WT00005376-2009 for Intake TP4, WT00005588-2009 for Intake

TP5, WT00005643-2009 for Intake E5A, WT00005754-2010 for Intake W8, WT00005954-2010 for Intake TP789, WT00005915-2010 for Intake E5B, WT00006102-2010 for Intake M3, WT00006415-2010 for Intake MA15, WT00006420-2010 for Intake MA17, WT00006428-2010 for Intake BR6, WT00006609-2010 for Intake HR1, WT00006559-2010 for Intake CR1, WT00006929-2010 for Intake W1, WT00006418-2010 for Intake MA14, WT00006865-2010 for Intake BR5, WT00007039-2010 for Intake DG1 WT00007042-2010 for Intake W3, WT00007043-2010 for Intake GL1, WT00007130-2010 for Intake BR4, WT00007139-2010 for Intake BR6 – SNH17 and WT00007319-2010 for Intake B2).

- 35. Construction Noise Permit (License No.: GW-RS0692-11 and GW-RS0969-11 for Eastern Portal, GW-RS0813-11, GW-RS1036-11 and GW-RS0358-12 for Western Portal, GW-RS0830-11 and GW-RS0222-12 for Eastern Adits, GW-RS0756-11 and GW-RS0077-12 for Intake PFLR1, GW-RS1050-11 for Intake W3, GW-RS1008-11 for Intake BR4, GW-RS1009-11 for Intake W1, GW-RS0732-11 and GW-RS0104-12 for tunnel and adits section under Central-Western District.)

Key Information in the Reporting Quarter

- 36. Summary of key information in the reporting quarter is tabulated in Table II.

Table II Summary Table for Key Information in the Reporting Quarter

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received (January 2012)	3	Construction noise at Eastern Portal	Investigation completed	Closed	---
Complaint received (February 2012)	1	Construction noise at Eastern Portal	Investigation completed	Closed	---
	1	Construction noise at Intake BR6			
	1	Construction noise at Intake PFLR1			
	2	Construction noise at Intake W8			
Complaint received (March 2012)	1	Construction noise at Intake W8	Investigation completed	Closed	---
	1	Construction noise at Intake M3			
Changes to the assumptions and key construction / operation activities recorded	0	---	N.A.	N.A.	---
Notifications of any summons & prosecutions	0	---	N.A.	N.A.	---

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
received					

Complaints and Prosecutions

37. 10 environmental complaints were received and investigated during the reporting quarter.
38. No warning, summon and notification of successful prosecution was received in the reporting period.

Future Key Issues

Key Issues for the Coming Month

39. Key environmental issues at Eastern and Western Portals, Intake MA16, MBD2, E5A, E5B, E7, PFLR1, RR1, THR2, W0, W5, P5, M3, TP4, TP5, TP789, HKU1, W10, W3, W8, MA15, MA17, GL1, HR1, W1, DG1, CR1, BR4, BR5, GL1, MA14 and BR6 in the coming month include:
- Noise from operation of the equipment, especially for rock-breaking activities, piling works and machinery on-site;
 - Dust generation from stockpiles of dusty materials, excavation works and rock breaking activities;
 - Runoff from exposed slope;
 - Wastewater and runoff discharge from site;
 - Regular removal of silt, mud and sand along u-channels and sedimentation tanks;
 - Review and implementation of temporary drainage system for the surface runoff;
 - Proper storage of construction materials on site;
 - Storage of chemicals/fuel and chemical waste/waste oil on site;
 - Watering for rock breaking activity, soil nailing and on haul road;
 - Accumulation of general and construction waste on site.

1. INTRODUCTION

- 1.1 The Project “Drainage Improvement in Northern Hong Kong Island – Hong Kong West Drainage Tunnel” involves the construction of a drainage tunnel deep into the ground in Mid-levels of the Northern Hong Kong Island from Tai Hang to Pokfulam to intercept and convey the stormwater from the upper catchment directly to the sea near Cyberport. The Drainage tunnel alignment starts from the Eastern Portal near Haw Par Mansion in Tai Hang and ends at the Western Portal located to the north of Cyberport running underneath the Pok Fu Lam, Tai Tam, Aberdeen and Lung Fu Shan Country Parks. The underground main drainage tunnel is 6.25m-7.25m in diameter and about 11km long. Two portals and a series of connecting adits and drop shafts are also been constructed. The layout plan of the Project is shown in **Figure 1**.
- 1.2 The Environmental Impact Assessment (EIA) Report for the Project was approved on 7 April 2006 under the Environmental Impact Assessment Ordinance (EIAO). An Environmental Permit (EP-272/2007) for the works was also granted on 26 April 2007. A varied Environmental Permit (EP) (EP-272/2007/A) was issued in 26 October 2007. Later, the further Environmental Permit (FEP-01/272/2007/A) and (FEP-01/272/2007/B) was issued on 28 January 2008 and 25 June 2009 to Dragages-Nishimatsu Joint Venture. Environmental Monitoring and Audit (EM&A) Manual for the Project was also included as part of the EIA reports in the register. An updated EM&A Manual has been issued on 7 May 2008.
- 1.3 Drainage Services Department awarded the construction of the Project to Dragages-Nishimatsu Joint Venture (hereinafter called “the Contractor”). The construction works commenced on 30 November 2007 and are scheduled to be completed by 2012.
- 1.4 Cinotech Consultants Limited (Cinotech) was commissioned by the Contractor to undertake the Environmental Team (ET) Services for the Project. All environmental and audit works were conducted by Cinotech and the laboratory testing works were conducted by a HOKLAS laboratory, Wellab Limited. This is the 16th quarterly EM&A report summarizing the EM&A works for the Project in the period between January to March 2012.

2. PROJECT CHARACTERISTICS

Project Organization and Contacts of Key Management

- 2.1 Different parties with different levels of involvement in the project organization include:
- Project Proponent – Drainage Services Department (DSD).
 - The Supervising Officer or Supervising Officer's Representative (SO or SOR) – Ove Arup & Partners (ARUP).
 - Environmental Team (ET) – Cinotech Consultants Limited (CCL).
 - Independent Environmental Checker (IEC) – Allied Environmental Consultants Limited (AEC).
 - Contractor - Dragages-Nishimatsu Joint Venture (DNJV).
- 2.2 The responsibilities of respective parties are detailed in Sections 1.14 to 1.28 of the Updated EM&A Manual of the Project. The project organization chart is presented in **Figure 2**.
- 2.3 The key contacts of the Project are shown in Table 2.1.

Table 2.1 Key Project Contacts

Party	Role	Name	Position	Phone No.	Fax No.
DNJV	Permit Holder	Mr. ALTIER Daniel	Project Manager	2671 7333	2671 9300
		Mr. UETAKE H.	Deputy Project Manager		
ARUP	Supervising Officer	Mr. JACKSON Wong	CRE	6117 6639	2436 1012
		Ms. Angela Yan	RE	3961 5206	
Cinotech	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089	3107 1388
		Ms. Ivy Tam	Project Coordinator and Audit Team Leader	2151 2090	
		Mr. Henry Leung	Monitoring Team Leader	2151 2087	
AEC	Independent Environmental Checker	Ms. Grace Kwok	Independent Environmental Checker	2815 7028	2815 5399
DNJV	Contractor	Mr. Boris Chow/ Ms. Ashley Au	Environmental Officer	3476 0753/ 3476 0754	2671 9300

Construction Programme and Synopsis of Work

2.4 The construction programme is presented in **Appendix A**.

3. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

- 3.1 The EM&A Manual designates locations for the ET to monitor environmental impacts in terms of air quality, noise and water quality due to the Project. When alternative monitoring locations are proposed, the criteria listed in Section 2.4.3 of the updated EM&A Manual shall be followed and the updated monitoring locations shall be approved by ER and agreed with IEC. The Project area and monitoring locations are depicted in **Figures 3a-n and 4a-e**. **Appendix B** gives details of monitoring requirements.

Monitoring Methodology and Calibration Details

- 3.2 Monitoring works/equipments were conducted/calibrated regularly in accordance with the EM&A Manual. Copies of calibration certificates are attached in the appendices of the Monthly Reports.

Environmental Quality Performance Limits (Action and Limit Levels)

- 3.3 The environmental quality performance limits, i.e. Action and Limit Levels were derived from the baseline monitoring results. Should the measured environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in **Appendix C**.

Environmental Mitigation Measures

- 3.4 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manual for the Contractor to implement. A list of mitigation measures is given in **Appendix F**.

4. MONITORING RESULTS

Weather Conditions

- 4.1 The weather during monitoring sessions was mainly sunny and cloudy. The weather conditions for each individual monitoring session were presented in the field record sheets.

Air Quality

1-hour TSP Monitoring

- 4.2 1-hour TSP monitoring at 2 monitoring stations, AQ1 and AQ2, was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for 1-hr TSP monitoring in the reporting quarter.

24-hour TSP Monitoring

- 4.3 24-hr TSP monitoring at 2 monitoring station, AQ1 and AQ3 was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting quarter.

- 4.4 The graphical presentations of the air quality monitoring results are shown in **Appendix D**.

Construction Airborne Noise

- 4.5 Noise monitoring at 19 monitoring stations, NC1, NC2, NC3, NC4, NC5, NC6, NC7, NC8, NC9, NC10, NC11, NC12, NC13, NC14, NC15a, NC16, NC17, NC18 and NC19 were conducted as schedule in the reporting period.

Eastern Portal

- 4.6 Four Action Level exceedances were recorded due to the complaints received on 9th, 16th, 27th January and 3rd February 2012 during the reporting period.

Western Portal

- 4.7 No Action/Limit Level exceedance was recorded during the reporting period.

Intake BR6

- 4.8 One Action Level exceedance was recorded due to the complaint received on 27th February 2012 during the reporting period.

Intake DGI

- 4.9 No Action/Limit Level exceedance was recorded during the reporting period.

Intake E5A

- 4.10 No Action/Limit Level exceedance was recorded during the reporting period.

Intake E7

4.11 No Action/Limit Level exceedance was recorded during the reporting period.

Intake MA14

4.12 No Action/Limit Level exceedance was recorded during the reporting period.

Intake PFLR1

4.13 One Action Level exceedance was recorded due to the complaint received on 6th February 2012 during the reporting period.

Intake RRI

4.14 No Action/Limit Level exceedance was recorded during the reporting period.

Intake THR2

4.15 No Action/Limit Level exceedance was recorded during the reporting period.

Intake W0

4.16 No Action/Limit Level exceedance was recorded during the reporting period.

Intake W5

4.17 No Action/Limit Level exceedance was recorded during the reporting period.

Intake W8

4.18 Three Action Level exceedances were recorded due to the complaints received on 13th, 17th February and 5th March 2012 during the reporting period.

Intake P5

4.19 No Action/Limit Level exceedance was recorded during the reporting period.

Construction Ground Borne Noise

4.20 Construction Ground Borne Noise Monitoring at GNC3 was temporary suspended since 7th May 2009 as the ISS EastPoint Property Management Ltd. received an instruction from the Incorporated Owners of Aegean Terrace that we are not permitted to conduct any noise monitoring inside Aegean Terrace for the Project.

4.21 According to the approved EIA report, noise monitoring should be performed at NSR1a (i.e. Crane Court) when TBM is operating through the tunnel section between points A and B). Therefore, Ground borne noise monitoring has been conducted at Crane Court (GNC4) since 3rd June 2009 during the TBM operated.

4.22 Ground borne noise monitoring at GNC1 – True Light Middle School, GNC2 – The Legend and GNC4 – Crane Court were completed by end of August 2009 accordingly.

4.23 Ground borne noise monitoring at GNC5 was completed by end of November 2009.

4.24 Ground borne noise monitoring at GNC6 – French International School was completed by end of June 2010.

4.25 Ground borne noise monitoring was conducted at GNC7 – Hong Villa was completed by the end of November 2011.

4.26 Ground borne noise monitoring was conducted at GNC8 – Raimondi College in the reporting month. No exceedance was recorded.

Water Quality

4.27 Water quality monitoring was conducted as schedule in the reporting period. No Action/Limit Level exceedance was recorded.

4.28 The summary of exceedances for each water quality parameters are provided in Table 4.1.

Table 4.1 Summary of Water Quality Exceedances in the Reporting Quarter

Water Quality	No. of Exceedances		Action Taken	Results of Action Taken	Remarks
	Action Level	Limit Level			
<i>March 2012</i>					
DO (Surface and Middle)	0	0	N/A	N/A	N/A
DO(Bottom)	0	0			
Turbidity	0	0			
SS	0	0			

4.29 No Action/Limit Level exceedance was recorded.

4.30 The graphical presentations of the water quality monitoring results are shown in **Appendix L**.

Underground water level

4.31 Ground water levels were measured once per month during the construction phase in order to ensure the water levels at those intakes near to the natural stream courses and thus on the surrounding habitats will not be significantly affected.

4.32 Locations of designated ground water level (borehole with piezometer) monitoring station UC1 at Eastern Portal has been changed to ADH48 which was verified by IEC on 5th June 2008. The updated ground water level monitoring stations, TP789_DH2, TP5_DH2, THR2_DH7 and PFLR1_DH2 were also verified by IEC on 19th June 2010. Monitoring data are shown in Table 4.2.

Table 4.2 Ground Water Level Monitoring Data in Reporting Quarter

Date	Water Level (from ground)/m
Location: ADH48 (Eastern Portal)	
19 January 2012	8.25

16 February 2012	7.37
15 March 2012	7.85
Location: TP789_DH2	
18 January 2012	14.65
17 February 2012	14.60
15 March 2012	14.60
Location: TP5_DH2	
18 January 2012	0.95
15 February 2012	0.72
15 March 2012	0.87
Location: THR2_DH7	
13 January 2012	3.00
14 February 2012	3.00
15 March 2012	3.00
Location:PFLR1_DH2	
18 January 2012	11.14
15 February 2012	11.77
15 March 2012	11.60

5. ENVIRONMENTAL AUDIT

Implementation Status of Environmental Mitigation Measures

- 5.1 The implementation status of environmental mitigation measures (EMIS) is given in **Appendix G**.

Site Audit Summary

- 5.2 During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations made during the reporting period are summarized in **Appendix G**.
- 5.3 The major deficiencies identified by ET in the reporting quarter are summarized as follow:

Water Quality

- To clear the leaves and debris in the drainage channel in intake PFLR1.
- To clear the mud in the drainage channel at intake P5.
- To clear the stagnant water in the drainage channel at intake W0.
- To clear the construction material in the drainage channel at intake MB16.
- Water in the sedimentation tank was observed silty in intake W8. The contractor was reminded to clear the tank regularly.
- To remove the stagnant water in the H-piles at intake SMH17.
- To clear the drainage channel at intake M3 and Western Portal.
- To clear the stagnant water at BR6, W10, MBD2 and HR1.
- To clear the mud in the sedimentation tank at intake RR1.
- Desilting facilities should be provided to the discharge water at intake P5.
- To clear the litter in the drainage channel at intake PFLR1.
- Desilting facilities should be provided to the discharge water before entering the public channel at W0.
- Clear the broken sand bags at near the gullies at Intake M3.
- Clear the discarded leaves at the drainage channel at Intake TP4.
- To clear the drainage channel near the seawall at Western Portal and avoid blockage.
- To clear properly the stagnant water at Eastern Portal.
- To clear the mud and stagnant water in the sedimentation tank at DG1 and W1.
- The drainage channel at BR5 is observed blocked with litter and grease.

Air Quality

- To provide dust mitigation measures during the rock breaking works at Eastern Portal.
- To cover the dusty stockpile properly at Intake GL1.

Construction Noise Impact

- To provide valid noise labels for the air compressors at intake GL1 and P5.

Waste/Chemical Management

- To provide labels for chemical or oil containers at MA17.
- To provide labels and drip tray for chemical or oil containers at BR4.
- To clear the construction waste on the slope at intake HKU1.
- To provide drip tray for oil and chemical containers at intake MBD2.
- To provide drip tray and labels for oil drums at intake MA17.
- Clear the rubbish at the area of seawall at Western Portal.
- Clear the chemical oil at the area near site at Western Portal.
- Properly clear the used cement bags at Intake TP789.
- Properly dispose the chemical oil on the ground at W10.
- Properly dispose the general refuse a Western Portal at the seawall and near the rubbish bin.
- Clear the empty chemical containers as chemical wastes at Intake M3.
- Provide drip tray for oil drums and prevent oil leakage.
- To provide drip tray for the oil drum at Eastern Portal.

5.4 The major deficiencies identified by IEC in the reporting quarter are summarized as follow:

*31st January 2012*New Observation:

- Stagnant water was observed inside the shaft of SMH17 and BR6. The Contractor was requested to clear the stagnant water.

Reminder:

- The Contractor was reminded to regularly clean up the surface channel at W0.

Follow Up Observations:

- The sedimentation tank at W8 has been cleared by the Contractor. (Closed)
- Stagnant water in the drip tray at CR1 has been removed by the Contractor and the outlet of the tray is plugged. (Closed)

29th February 2012New Observation:

- Sediments were accumulated inside the desilting tank at Intake RR1. The Contractor was requested to clear the sediments.
- Stagnant water was observed at intake W10. The Contractor was requested to clear the stagnant water.

Reminder:

- The Contractor was reminded to provide sedimentation tank at intake P5.

Follow Up Observations:

- The stagnant water inside the shaft of SMH17 and BR6 had been cleared by the Contractor. (Closed)

29th March 2012New Observation:

- Stagnant water was accumulated inside the desilting tank at intake W1. The Contractor was requested to remove the stagnant water.
- Stagnant water was observed at intake BR4. The Contractor was requested to clear the stagnant water to prevent mosquito breeding.

Reminder:

- The Contractor was reminded to clean up the surface channel at intake BR5.

Follow Up Observations:

- The accumulated sediments inside the desilting tank at intake RR1 had been cleared by the Contractor. (Closed)
- The stagnant water at intake W10 had been cleared by the Contractor. (Closed)

Effectiveness of Mitigation Measures

- 5.5 The mitigation measures recommended in the EIA report and required by the EP are considered effective in minimizing environmental impacts. The Contractor has implemented the recommended mitigation measures except those mitigation measures not applicable at this stage, it is however considered that the Contractor could put greater efforts into proper implementation of these measures, especially for the construction of noise enclosure and use of quiet PME, to ensure their intended effects are fully achieved.

Status of Environmental Licensing and Permitting

- 5.6 Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, An Environmental Permit No. EP-272/2007 was issued on 26 April 2007 and Environmental Permit No. EP-272/2007/A was issue on 26 October 2007. Later, the further Environmental Permit (FEP-01/272/2007/A) and (FEP-01/272/2007/B) was issued on 28 January 2008 and 25 June 2009 to Dragages-Nishimatsu Joint Venture.
- 5.7 Registration of Chemical Waste Producer (License: 5213-148-D2393-02 for Eastern

Portal and No. 5213-172-D2393-01 for Western Portal).

- 5.8 Water Discharge License (License No.: EP860/W10/XY0175 for Area of Mount Butler Office, EP860/W10/XY0177 for Eastern Portal, EP820/W9/XT086 and WT00005864-2010 for Western Portal, EP860/W10/XY0183 for Intake W0, WT00003372-2009 for Intake SM1, WT00003737-2009 for Intake MB16, WT00004126-2009 for Intake HKU1, WT00003738-2009 for THR2, WT00004270-2009 for PFLR1, WT00004806-2009 for Intake E7, WT00004808-2009 for MBD2, WT00004885-2009 for Intake RR1, WT00005135-2009 for Intake W10, WT00005357-2009 for Intake W5, WT00005374-2009 for Intake P5, WT00005376-2009 for Intake TP4, WT00005588-2009 for Intake TP5, WT00005643-2009 for Intake E5A, WT00005754-2010 for Intake W8, WT00005954-2010 for Intake TP789, WT00005915-2010 for Intake E5B, WT00006102-2010 for Intake M3, WT00006415-2010 for Intake MA15, WT00006420-2010 for Intake MA17, WT00006428-2010 for Intake BR6, WT00006609-2010 for Intake HR1, WT00006559-2010 for Intake CR1, WT00006929-2010 for Intake W1, WT00006418-2010 for Intake MA14, WT00006865-2010 for Intake BR5, WT00007039-2010 for Intake DG1, WT00007042-2010 for Intake W3, WT00007043-2010 for Intake GL1, WT00007130-2010 for Intake BR4, WT00007139-2010 for Intake BR6 – SMH17 and WT00007319-2010 for Intake B2).
- 5.9 Construction Noise Permit (License No.: GW-RS0692-11 and GW-RS0969-11 for Eastern Portal, GW-RS0813-11, GW-RS1036-11 and GW-RS0358-12 for Western Portal, GW-RS0830-11 and GW-RS0222-12 for Eastern Adits, GW-RS0756-11 and GW-RS0077-12 for Intake PFLR1, GW-RS1050-11 for Intake W3, GW-RS1008-11 for Intake BR4, GW-RS1009-11 for Intake W1, GW-RS0732-11 and GW-RS0104-12 for tunnel and adits section under Central-Western District.)
- 5.10 The status of these licenses and permits obtained for the Project is summarized in **Appendix H**.

Status of Waste Management

- 5.11 During this reporting quarter, a total 132 nos. of dump trucks of waste were delivered to SENT, 2 trips of C&D waste were delivered to Tuen Mun Fill Bank. 669 and 5 trips of C&D waste were delivered to Chai Wan Public Barging Point and TKO Fill Bank respectively. Both the trip ticket system and chit accounting system for disposal of waste were operating smoothly to date. 16 trucks overloading case was recorded during this reporting period (All cases were within the 105% allowable buffer weight). No disposal of inert C&D material to public sorting facilities and no dump truck without cover were reported from CEDD. In respect of the dump truck cover, DNJV keeps on take record photos and inspection to ensure that all dump trucks have fully covered the skip before leaving the site.
- 5.12 The rock materials from the Eastern Portal and Western Portal were received by the alternative disposal sites at ZhongShan. Some of the tunnel spoils from adits were also received by Nishimatsu Construction Co. Ltd. Construction Site of MTR SIL(E) Contract 902 which was started from 30th June 2011.
- 5.13 The monthly summary of waste flow table for January to March 2012 are provided in **Appendix I**.

6. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

Summary of Exceedances

6.1 Environmental monitoring works were performed in the reporting period and all monitoring results were checked and reviewed. A summary of exceedances is attached in **Appendix J**. The details of each exceedance were attached in the Monthly Reports.

Air Quality

6.2 No Action/ Limit Level exceedance was recorded in the reporting quarter.

Construction Airborne Noise

Eastern Portal

6.3 Four Action Level exceedances were recorded due to the complaints received on 9th, 16th, 27th January and 3rd February 2012 during the reporting period.

Intake BR6

6.4 One Action Level exceedance was recorded due to the complaint received on 27th February 2012 during the reporting period.

Intake PFLR1

6.5 One Action Level exceedance was recorded due to the complaint received on 6th February 2012 during the reporting period.

Intake W8

6.6 Three Action Level exceedances were recorded due to the complaints received on 13th, 17th February and 5th March 2012 during the reporting period.

Construction Ground Borne Noise

6.7 No Action/ Limit Level exceedance was recorded in the reporting quarter.

Construction Impacts on Water Quality

6.8 All marine water quality monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

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

6.9 There was no non-compliance from the site audits in the reporting quarter. The observations and recommendations made in each individual site audit session were attached in the Monthly Reports.

7. ENVIRONMENTAL COMPLAINTS AND PROSECUTIONS

- 7.1 10 environmental complaints, including 3 for January 2012, 5 for February 2012 and 2 for March 2012 were received and investigated during the reporting quarter. The updated Complaint Log is attached in **Appendix K**.
- 7.2 No warning, summon and notification of successful prosecution was received in the reporting period.
- 7.3 There were a total of 122 project related environmental complaints, no warnings, summons and successful prosecutions received since the commencement of the Project.

8. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

8.1 The major construction activities in the coming month include:

- Outfall-end wall dismantling, Arch tunnel structures at West and River Channel and Tunnel structures at East Portal;
- Permanent Adit lining works at W0, MA14, W5, SM1, P5, W1, DG1, HR1, GL1, CR1, B2, BR4, W3, RR1, BR5, BR6 and MA17;
- Stilling chamber lining works at W5, RR1, BR6, W3 part 2 and MA17;
- Permanent Intake Structure Construction at Intake DG1, PFLR1, BR5, MBD2, HR1, BR4, E5A, W3, B2, W10, W1, MA14, RR1, W0, W5, M3, E7 and MA17;
- Excavation of dropshaft at Intake CR1 by Raise Boring method;
- Excavation of intake structure at Intake P5;
- HDC works on-going at Intake W8;
- Casting of dropshaft precast rings;
- Permanent dropshaft lining works at DG1, W8, MA17 and W5;
- Penstock and metal works at Intakes W1, BR4, PFLR1, M3, BR5, W0 and E5A;
- Intake reinstatement works at Intakes MBD2, BR6, B2, BR5, M3 and PFLR1;
- Permanent Leaky cable installation work on-going; and
- Temporary Tunnel facilities dismantling on-going.

8.2 According to the environmental audit performed in the reporting period, the following recommendations were made:

Air Quality Impact

- To prohibit any open burning on site.
- To regularly maintain the machinery and vehicles on site.
- To implement dust suppression measures on all haul roads, stockpiles, dry surfaces and excavation works.
- To provide hoarding

Noise Impact

- To inspect the noise sources inside the site.
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers.
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers in an appropriate location.

Water Impact

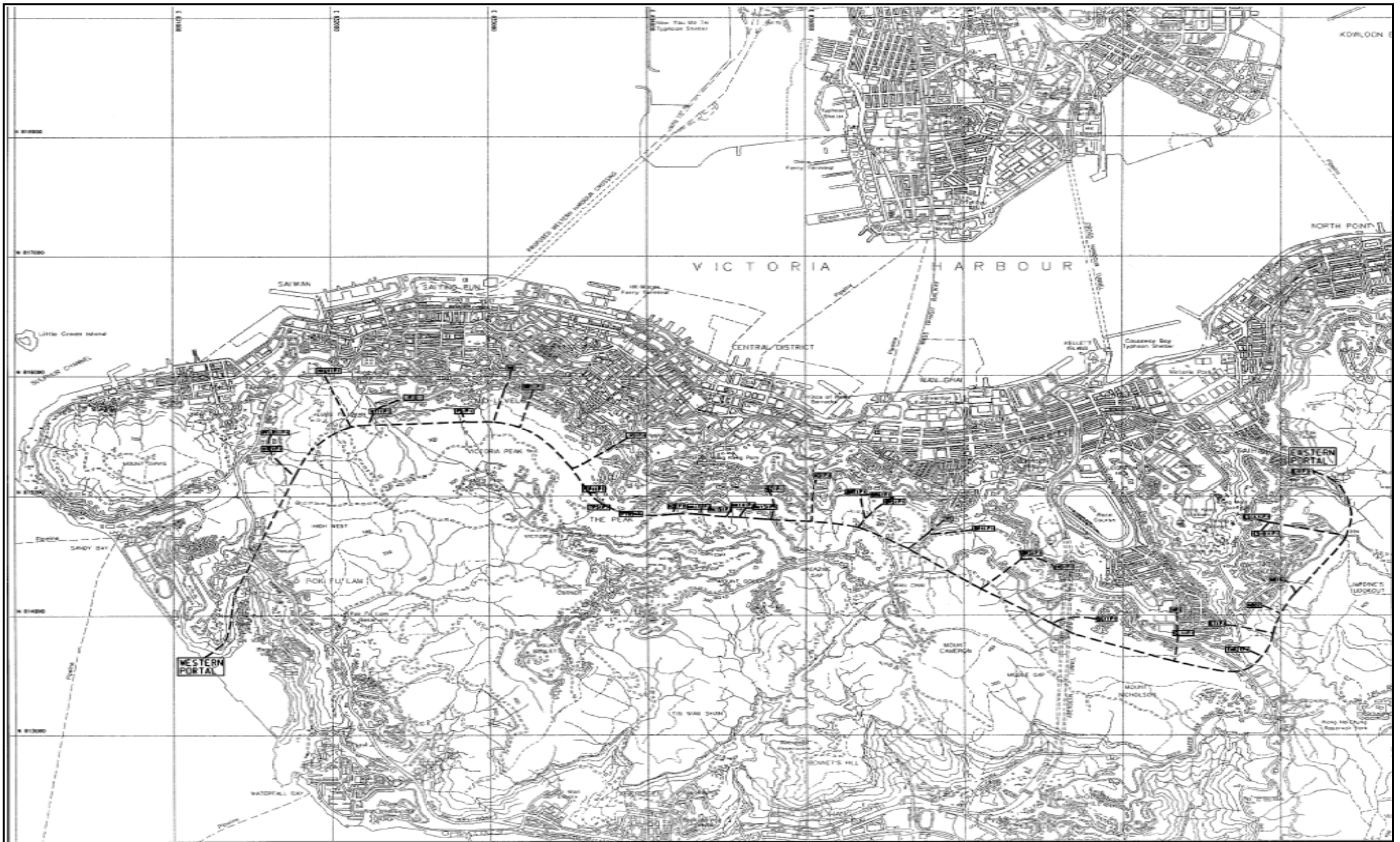
- To prevent any surface runoff discharge into any stream course.
- To review and implement temporary drainage system.
- To identify any wastewater discharges from site.
- To ensure properly maintenance for de-silting facilities.
- To clear the silt and sediment in the sedimentation tanks.

- To review the capacity of de-silting facilities for discharge.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.
- To avoid accumulation of stagnant and ponding water on site.

Waste/Chemical Management

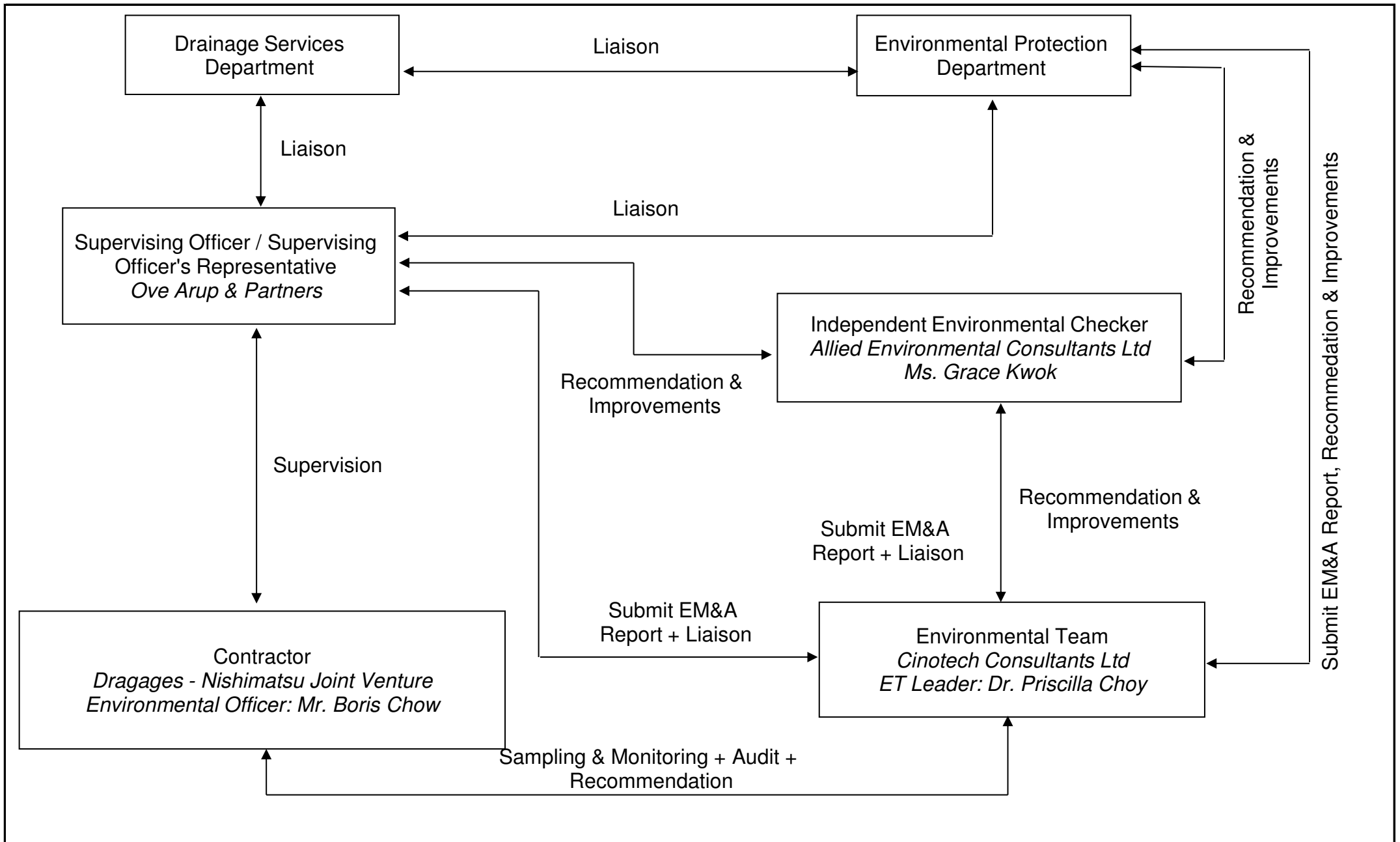
- To check for any accumulation of waste materials or rubbish on site.
- To ensure the performance of sorting of C&D materials at source (during generation);
- To carry out inspection of dump truck at site exit to ensure inert and non-inert C&D materials are properly segregated before removing off site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To avoid improper handling or storage of oil drum on site.

FIGURES

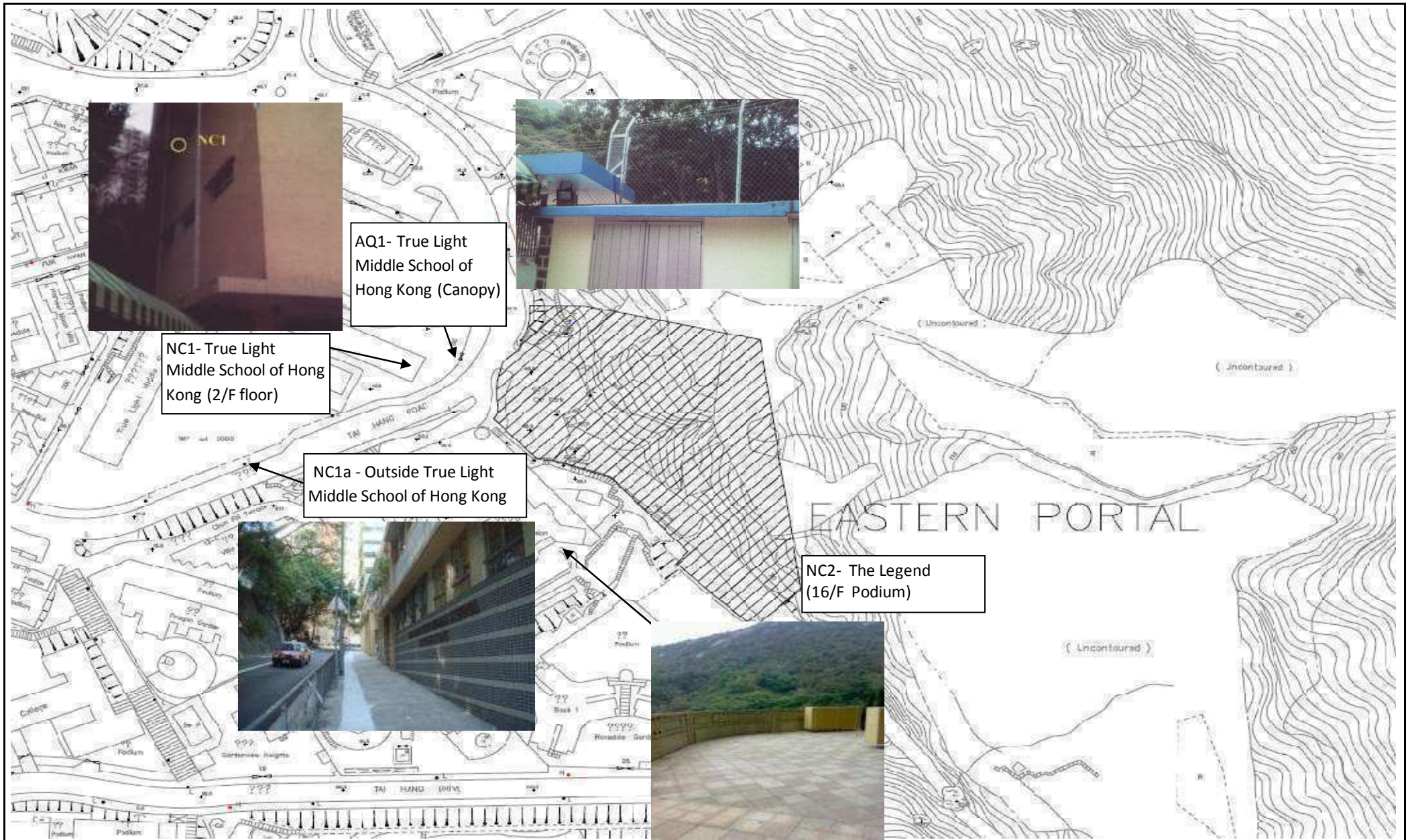


Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel		N.T.S	No. MA8001
	Site Layout Plan		Date	Figure
			Apr-08	1.1





Title	Contract No. DC/2007/10	Scale	N.T.S	Project No.	MA8001	CINOTECH
	Design and Construction of Hong Kong West Drainage Tunnel	Date	Nov-11	Figure	2.1	
Organization Chart						

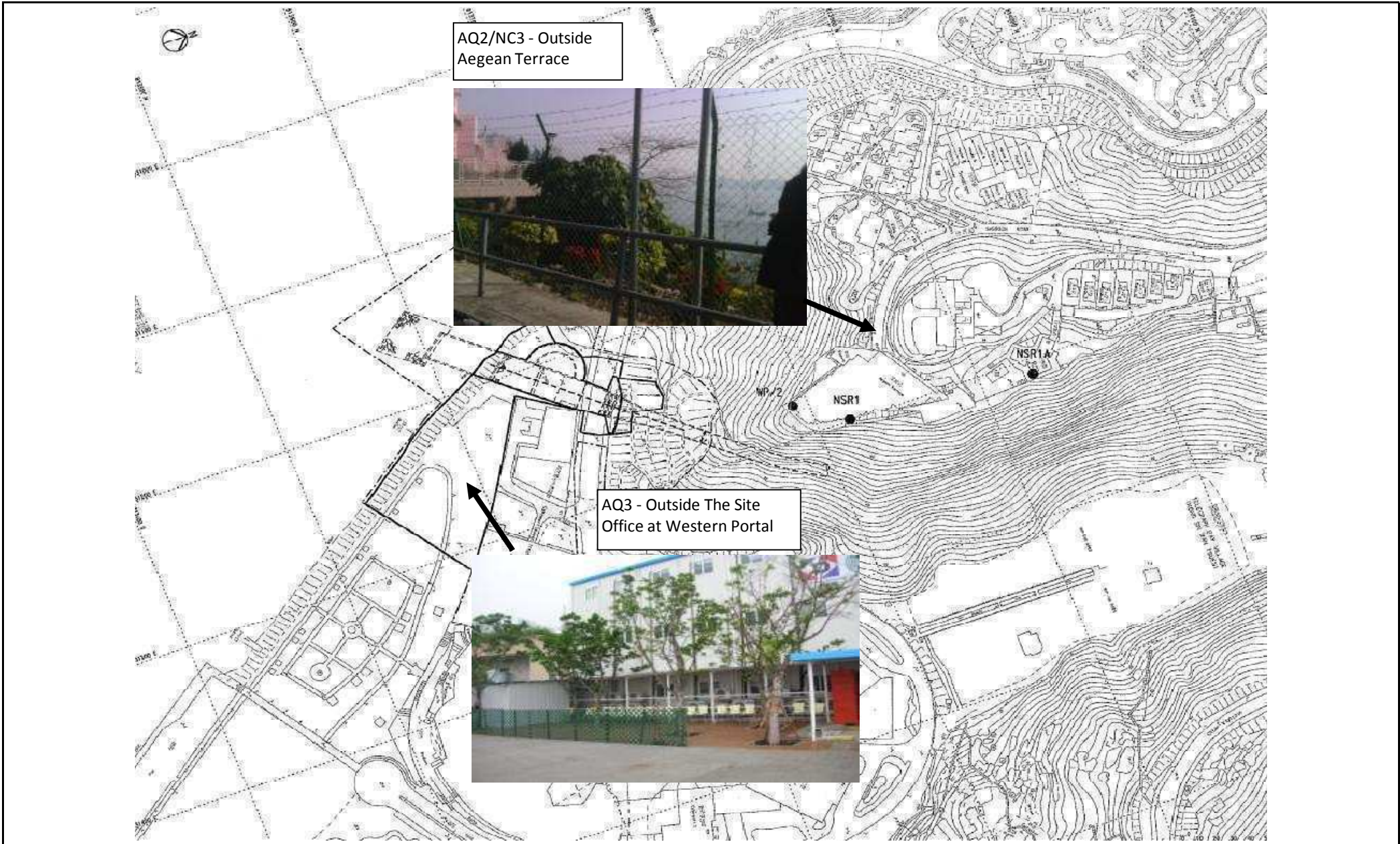


Title
 Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Eastern Portal)
 Locations of Air Quality and Noise Monitoring Station

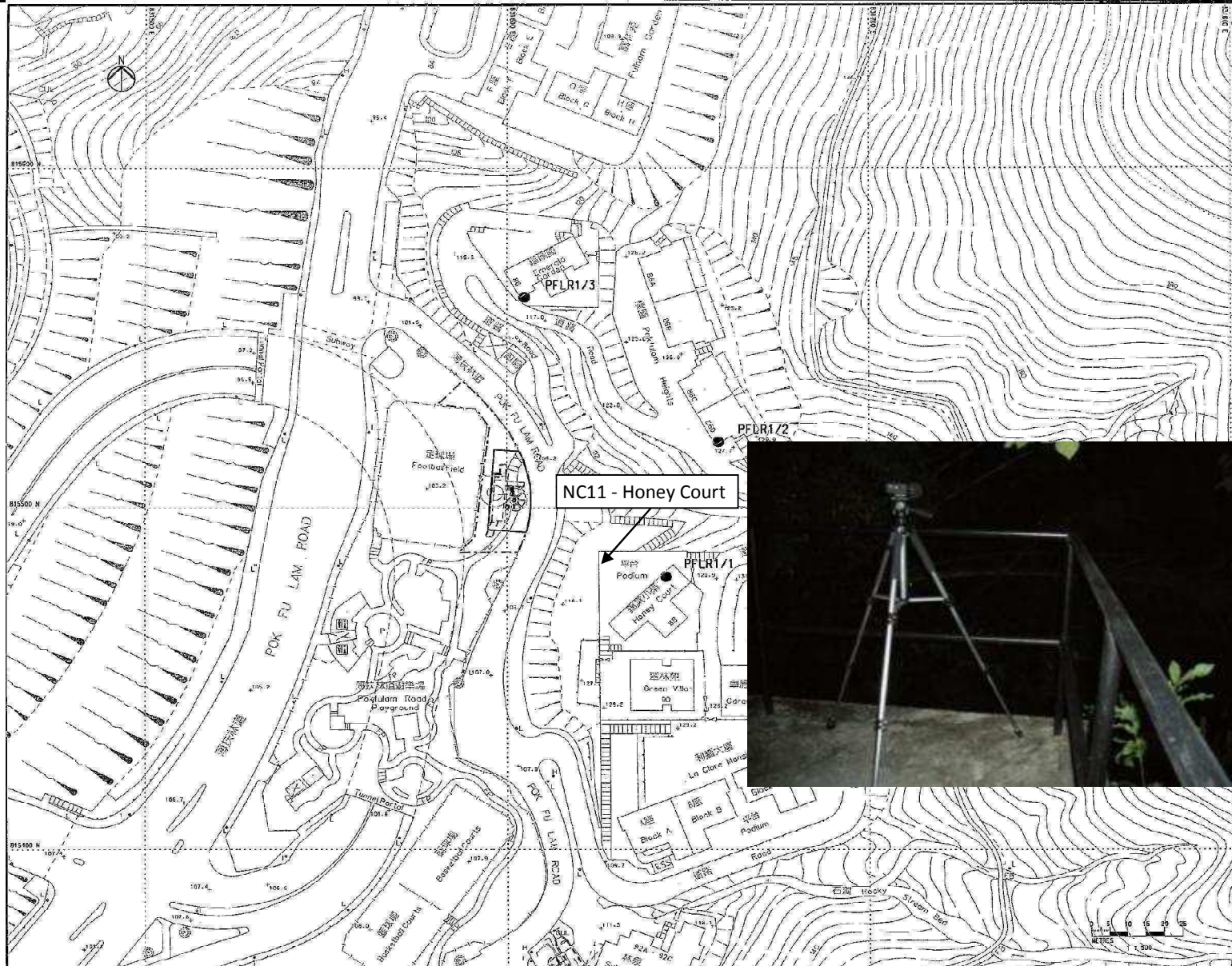
Scale
 N.T.S
 Date
 Sep-09

Project
 No. MA 8001
 Figure
 3.1a





Title	Contract No. DC/2007/10		Scale	Project		CINOTECH
	Design and Construction of Hong Kong West Drainage Tunnel (Western Portal)		N.T.S	No.	MA 8001	
	Locations of Air Quality and Noise Monitoring Station		Date	Sep-09	Figure	3.1b



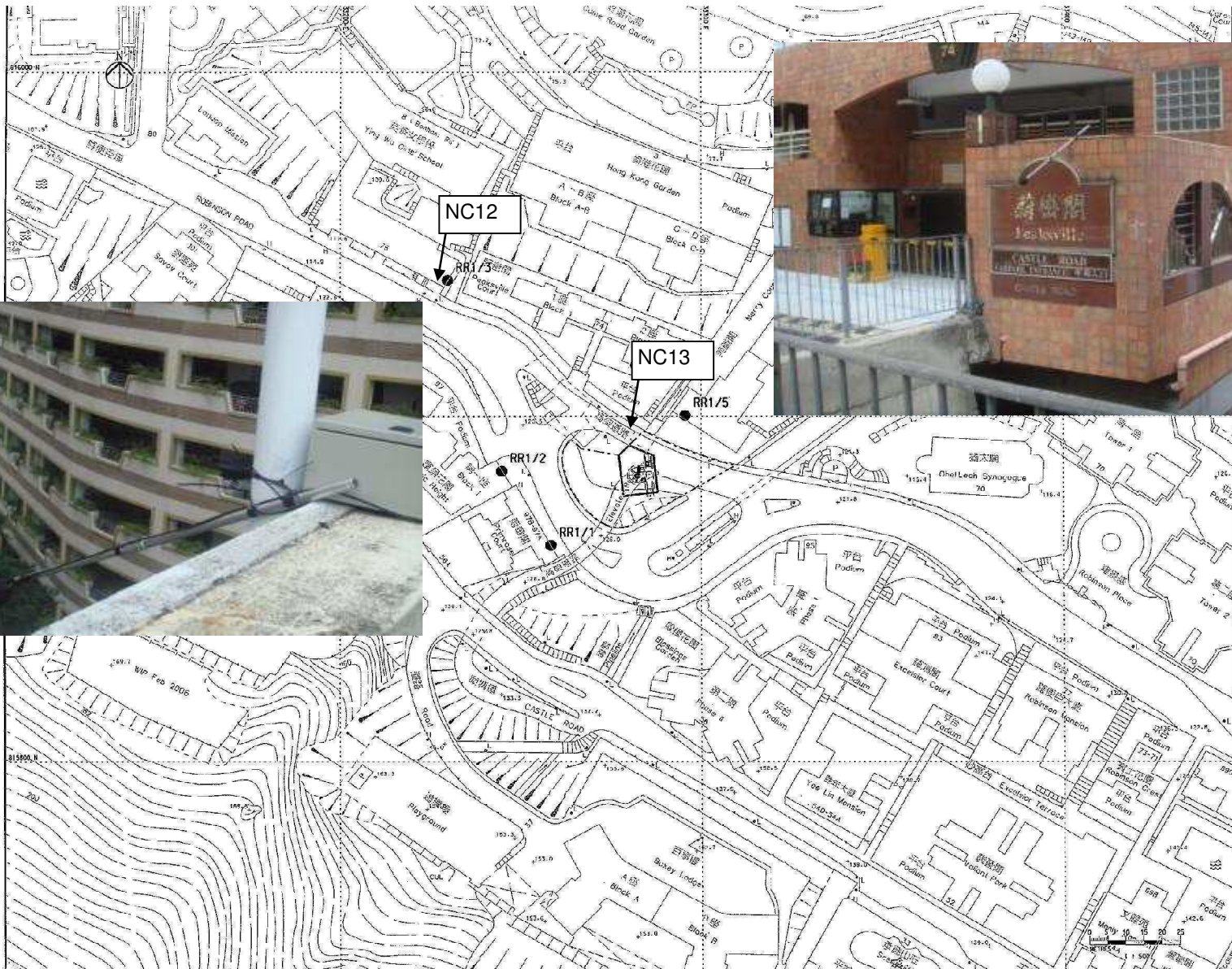
Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intake PFLR1)		N.T.S	No. MA 8001
	Locations of Noise Monitoring Stations		Date	Figure
			Sep-09	3.1d





Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intake W0)			
	Locations of Noise Monitoring Stations		Date	Figure
			Oct-11	3.1e





Title
 Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intakes RR1)
 Locations of Noise Monitoring Stations

Scale	N.T.S	Project No.	MA 8001
Date	Jan 10	Figure	3.1f





Title
 Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intakes E5A)
 Locations of Noise Monitoring Stations

Scale
 N.T.S
 Date
 Feb-10

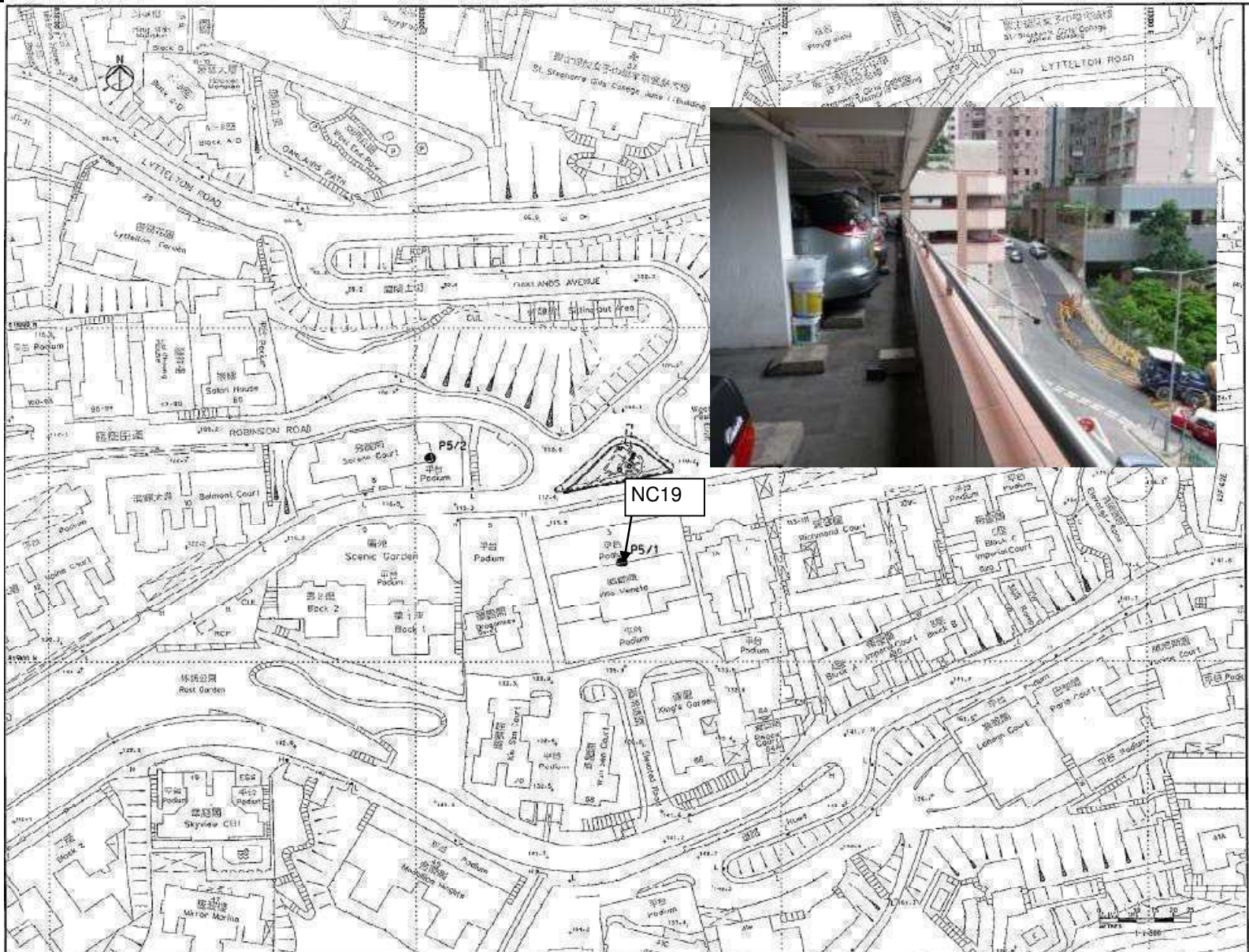
Project
 No. MA 8001
 Figure
 3.1h





Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intake THR2)		N.T.S	No. MA 8001
	Locations of Noise Monitoring Stations		Date	Figure
			Feb-10	3.1i

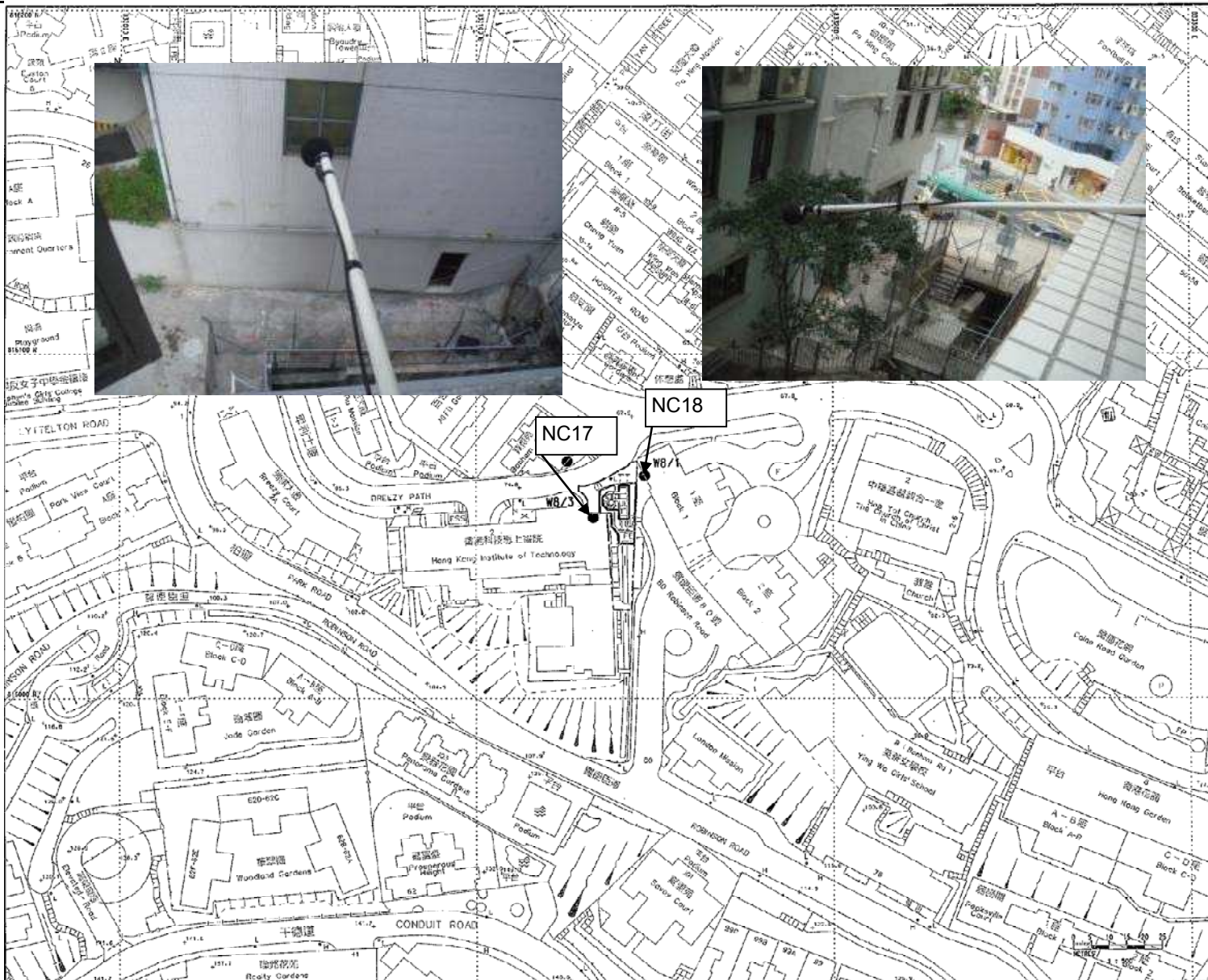




Title
 Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intakes P5)
 Locations of Noise Monitoring Stations

Scale	N.T.S	Project No.	MA8001
Date	Feb-10	Figure	3.1j





Title
 Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intake W8)
 Locations of Noise Monitoring Stations

Scale	N.T.S	Project No.	MA8001
Date	Jun-10	Figure	3.1k

CINOTECH



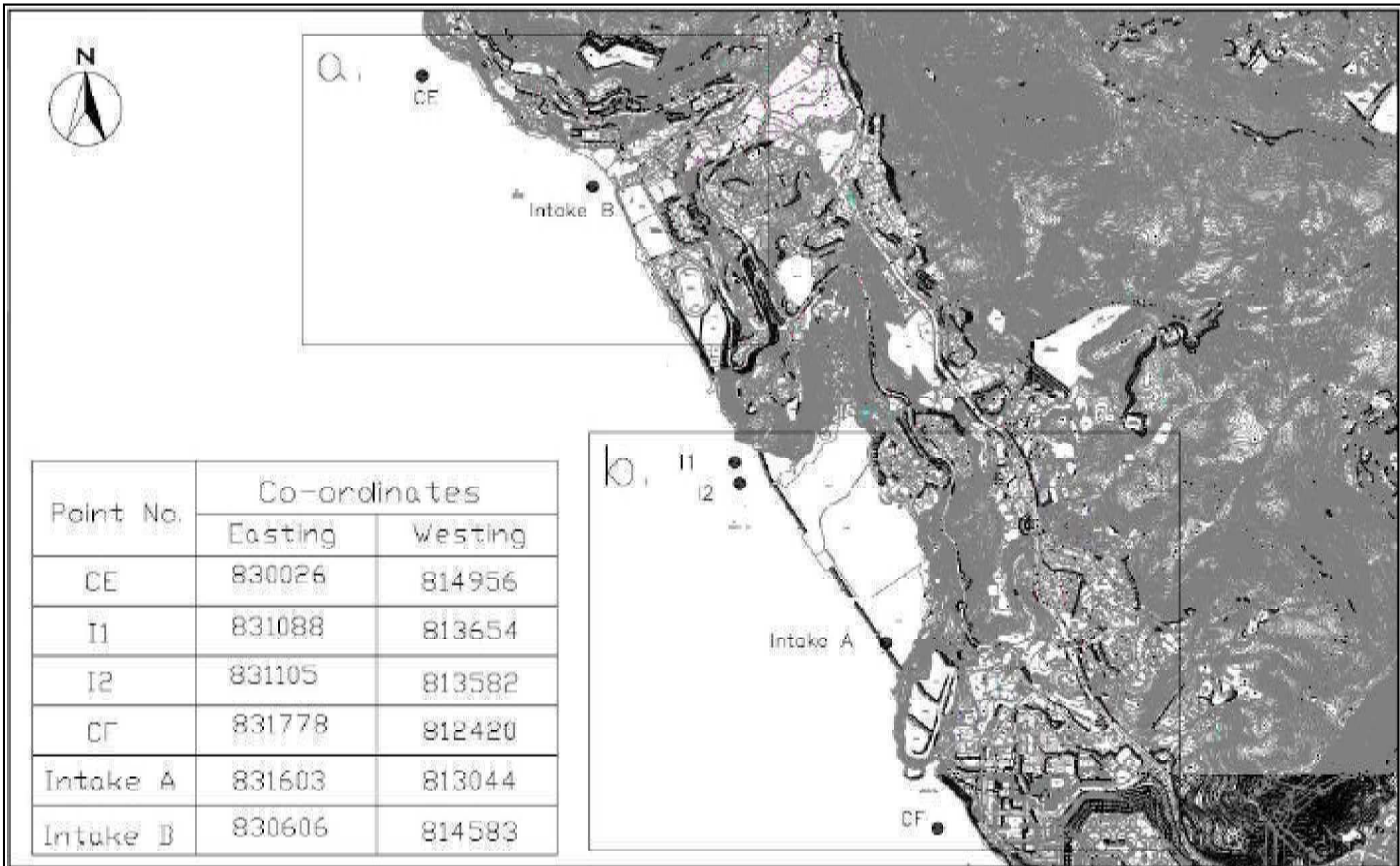
Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intake MA14)		N.T.S	No. MA8001
Locations of Noise Monitoring Stations		Date	Figure	
		Aug-10	3.1m	



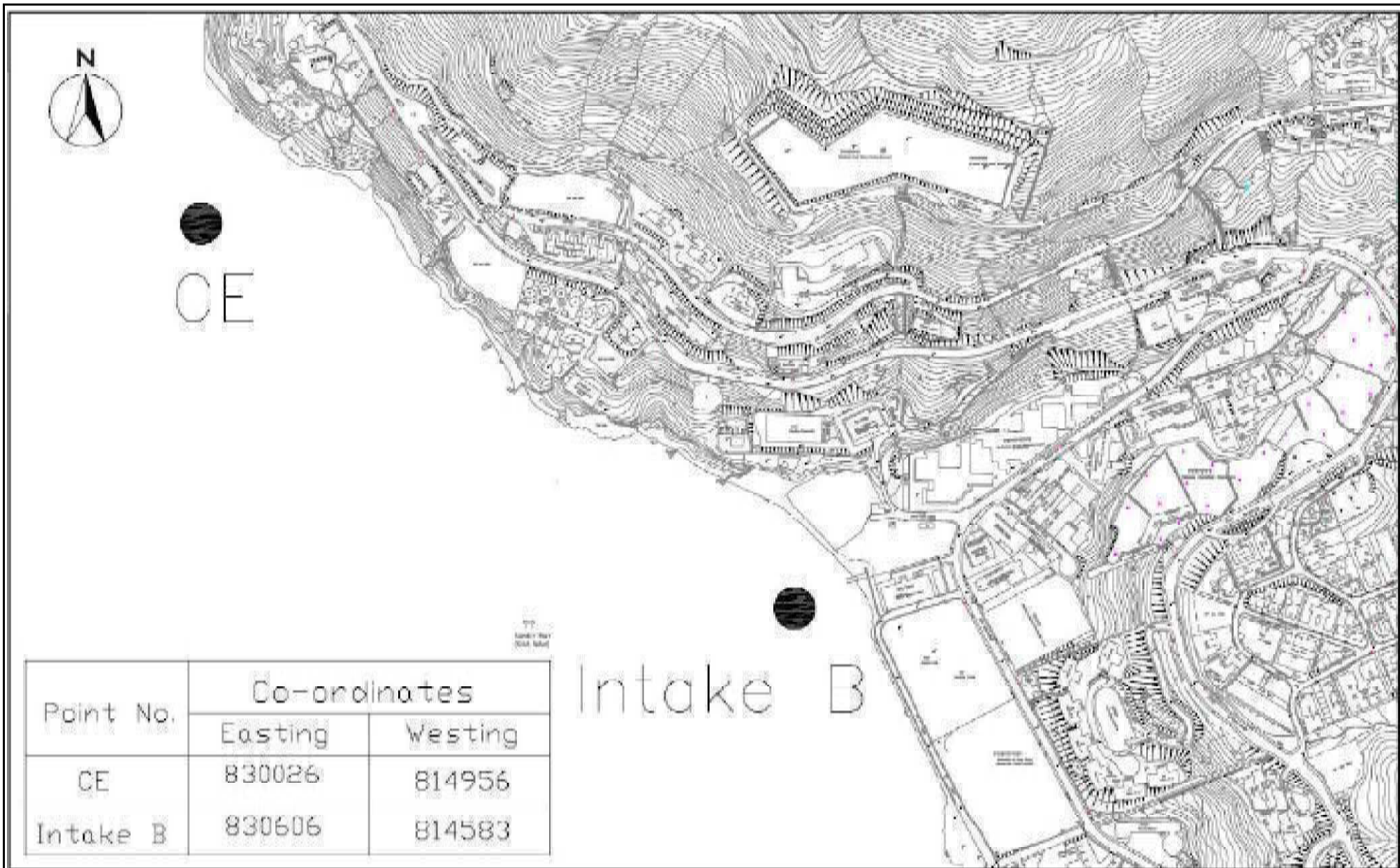


Title	Contract No. DC/2007/10		Scale	Project
	Design and Construction of Hong Kong West Drainage Tunnel (Intakes BR6)			
Locations of Noise Monitoring Stations			Date	Figure
			Sep-10	3.1n





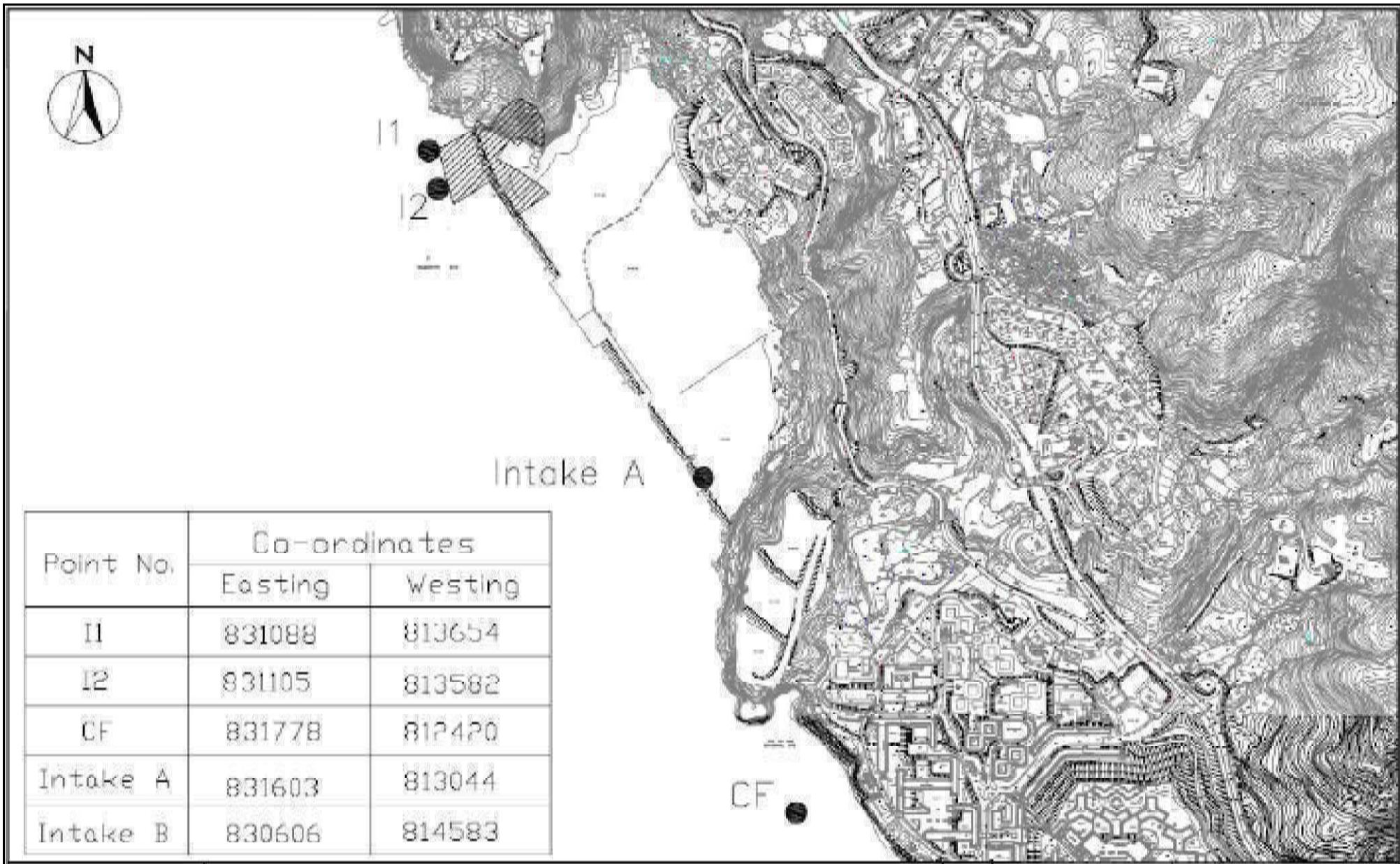
Title	Contract No. DC/2007/10		Scale	Project	CINOTECH
	Design and Construction of Hong Kong West Drainage Tunnel		N.T.S	No. MA8001	
	Locations of Water Quality Monitoring Stations		Date	Figure	
			Jun-08	4.1	



Title Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 Locations of Water Quality Monitoring Stations

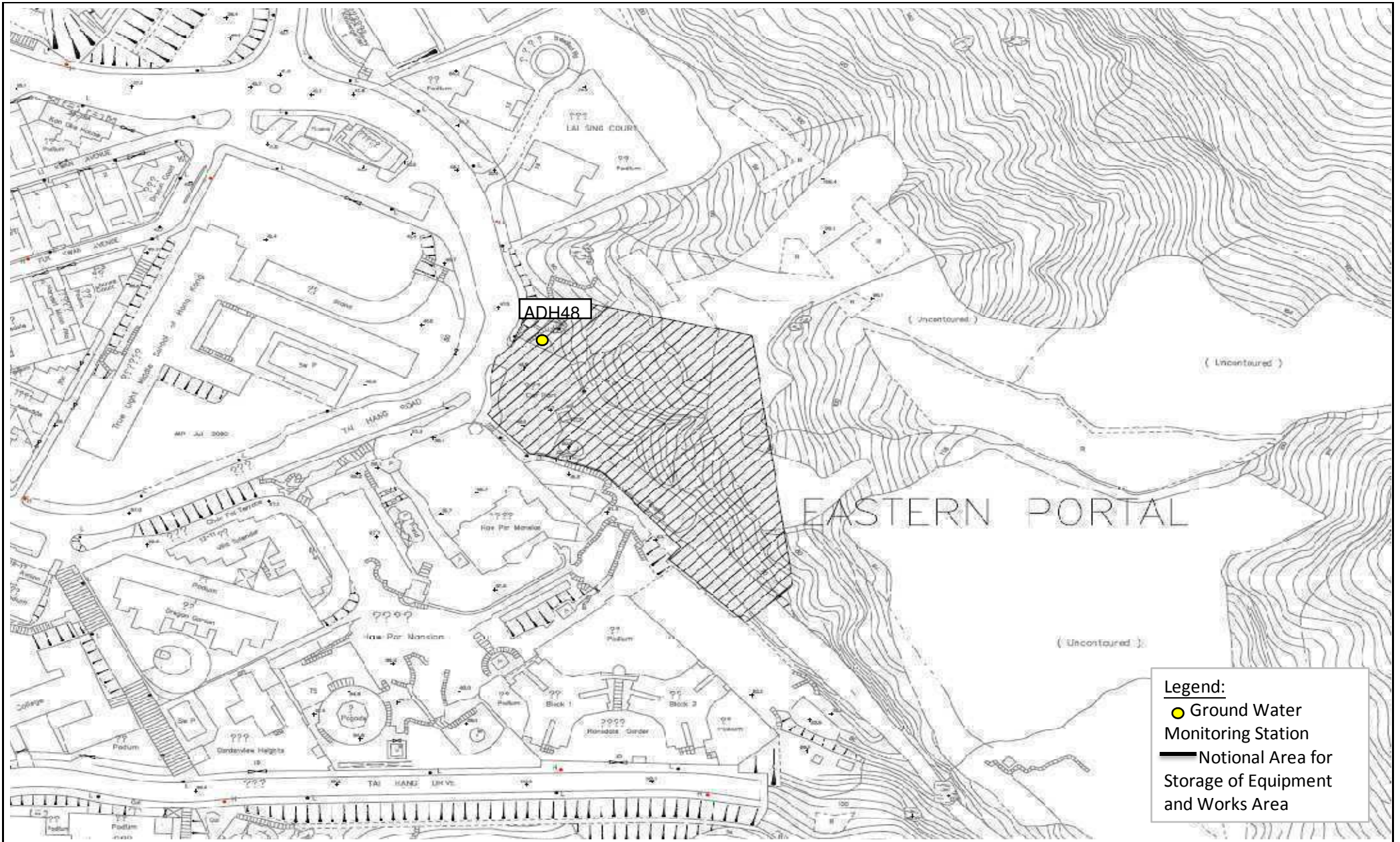
Scale	N.T.S	Project No.	MA8001
Date	Jun-08	Figure	4.1a



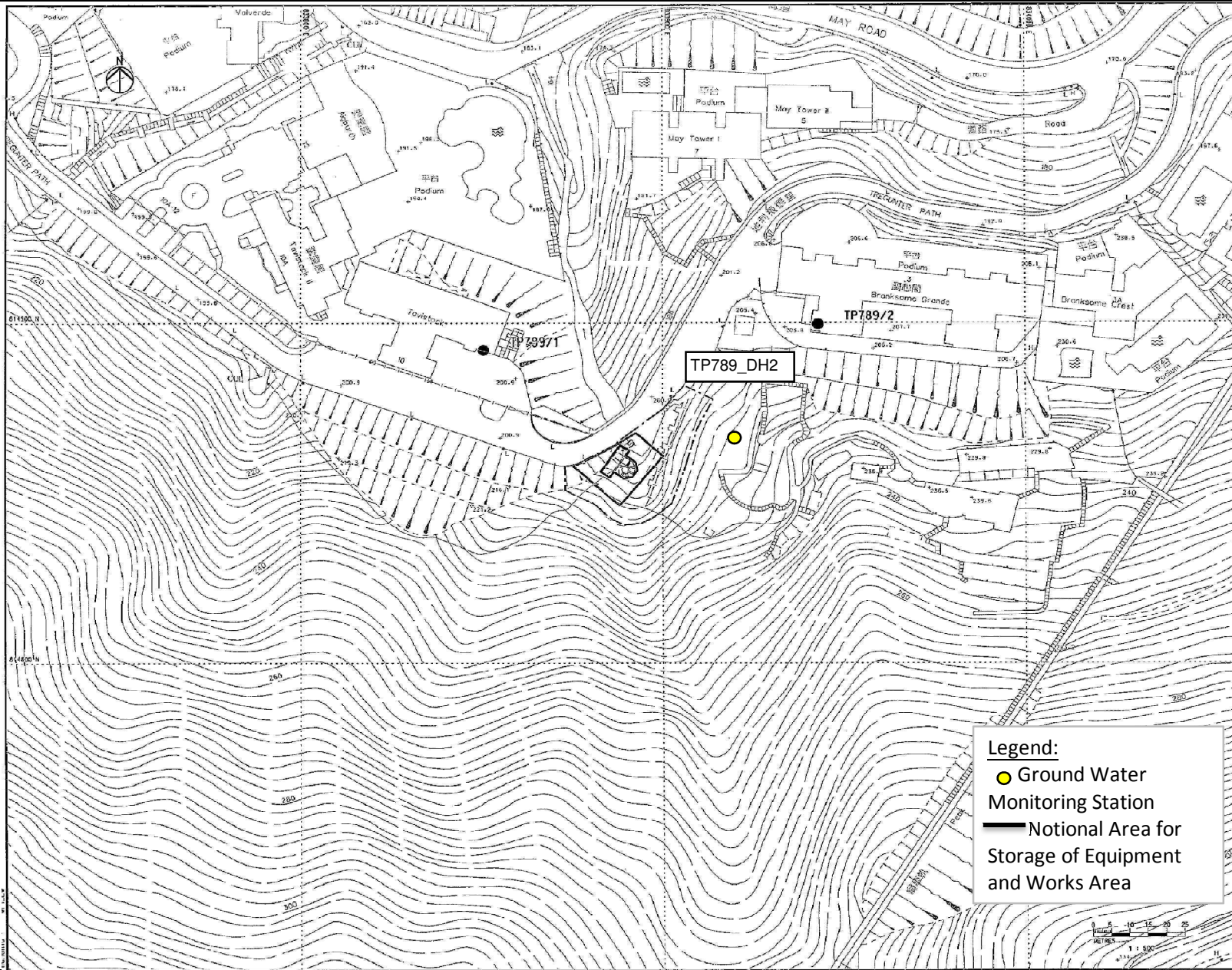


Point No.	Co-ordinates	
	Easting	Westing
I1	831088	813654
I2	831105	813582
CF	831778	812420
Intake A	831603	813044
Intake B	830606	814583

Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Locations of Water Quality Monitoring Stations	Scale	Project	
		N.T.S	
	Date	Figure	
	Jun-08	4.1b	



Title	Contract No. DC/2007/10		Scale	Project	CINOTECH
	Design and Construction of Hong Kong West Drainage Tunnel (Eastern Portal)		N.T.S	No. MA8001	
	Location of ground water level Monitoring Station		Date	Figure	
			Mar-10	4.2a	

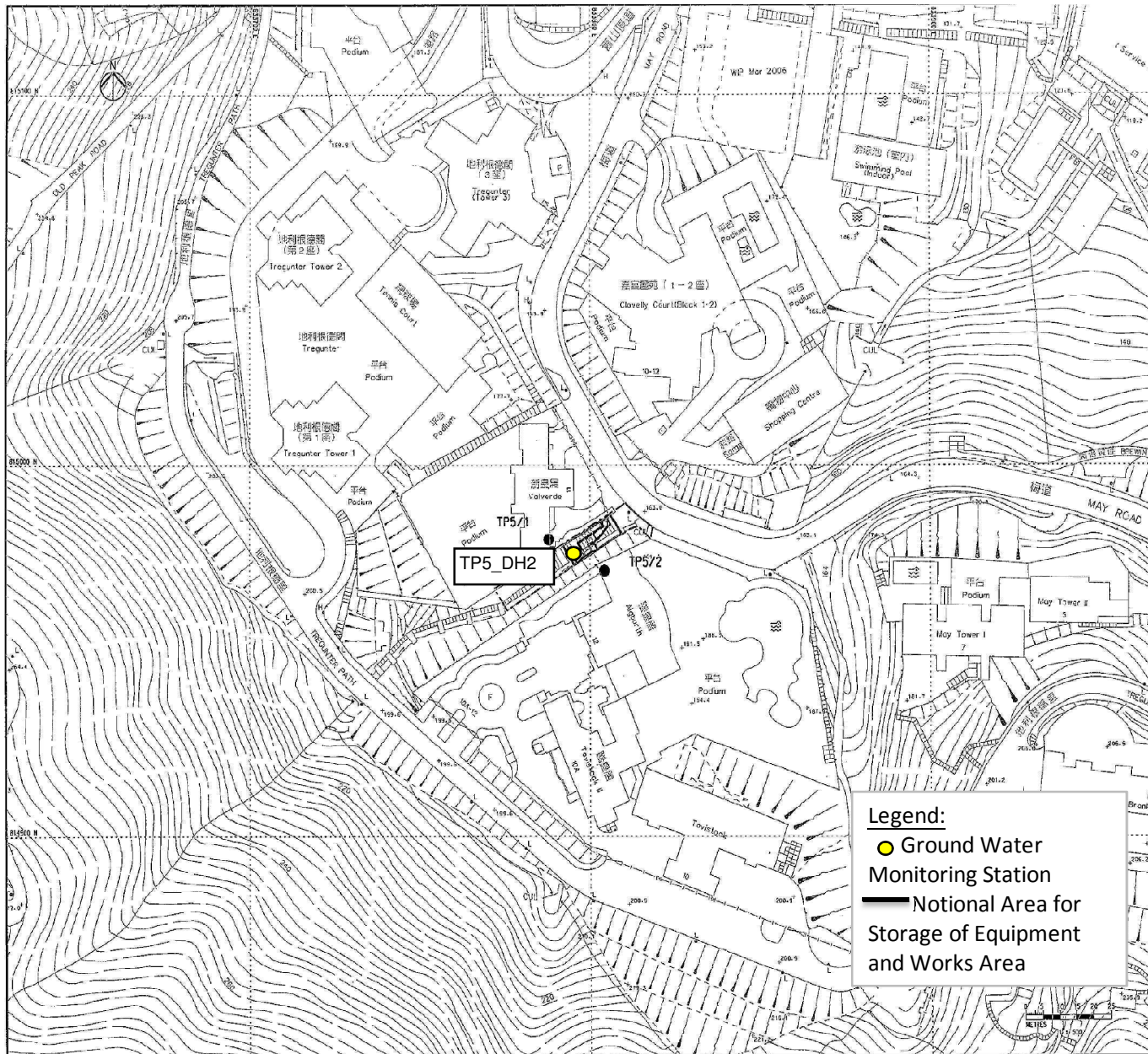


Title

Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intake TP789)
 Location of ground water level Monitoring Station

Scale	N.T.S	Project No.	MA8001
Date	Mar-10	Figure	4.2b



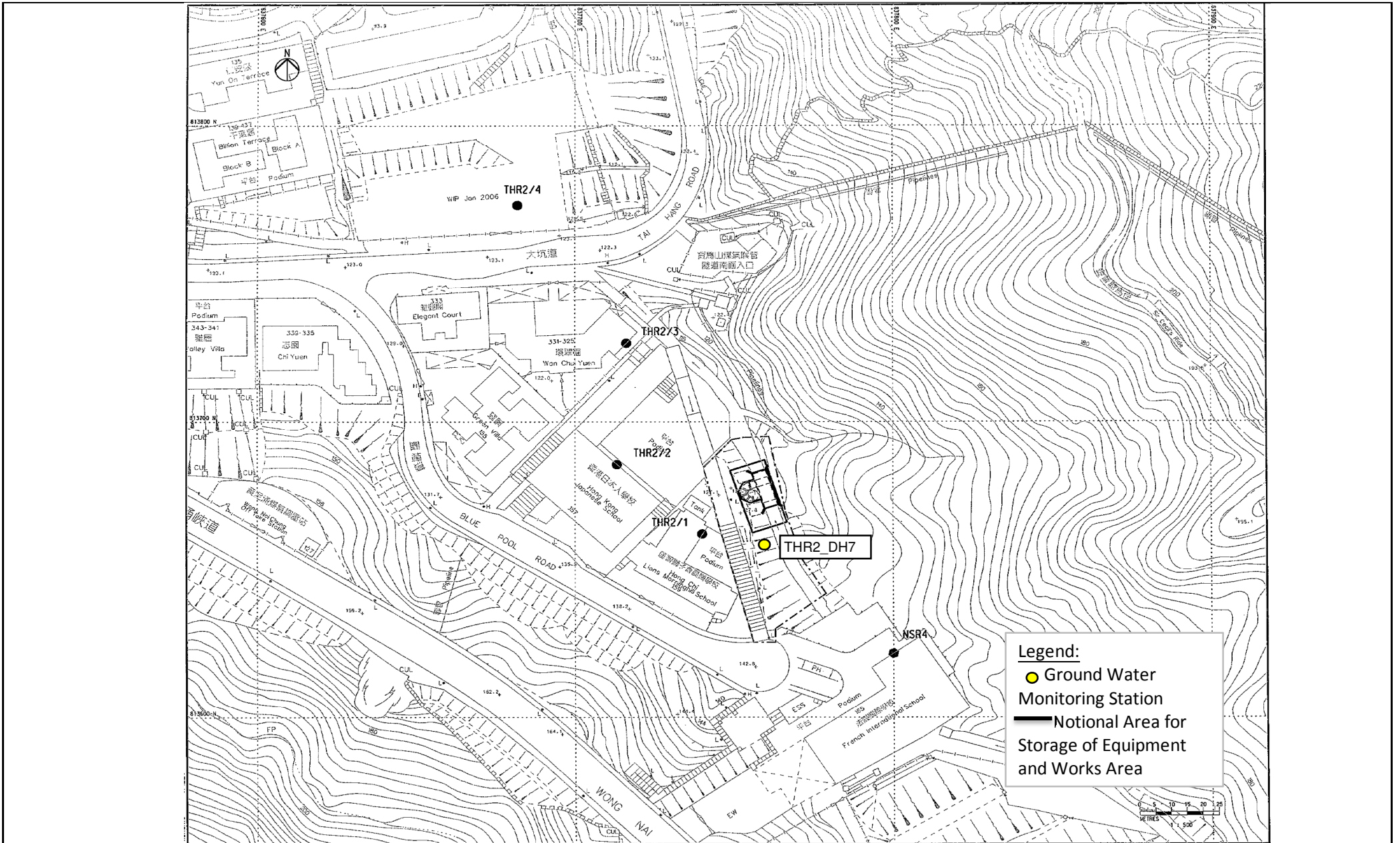


Title

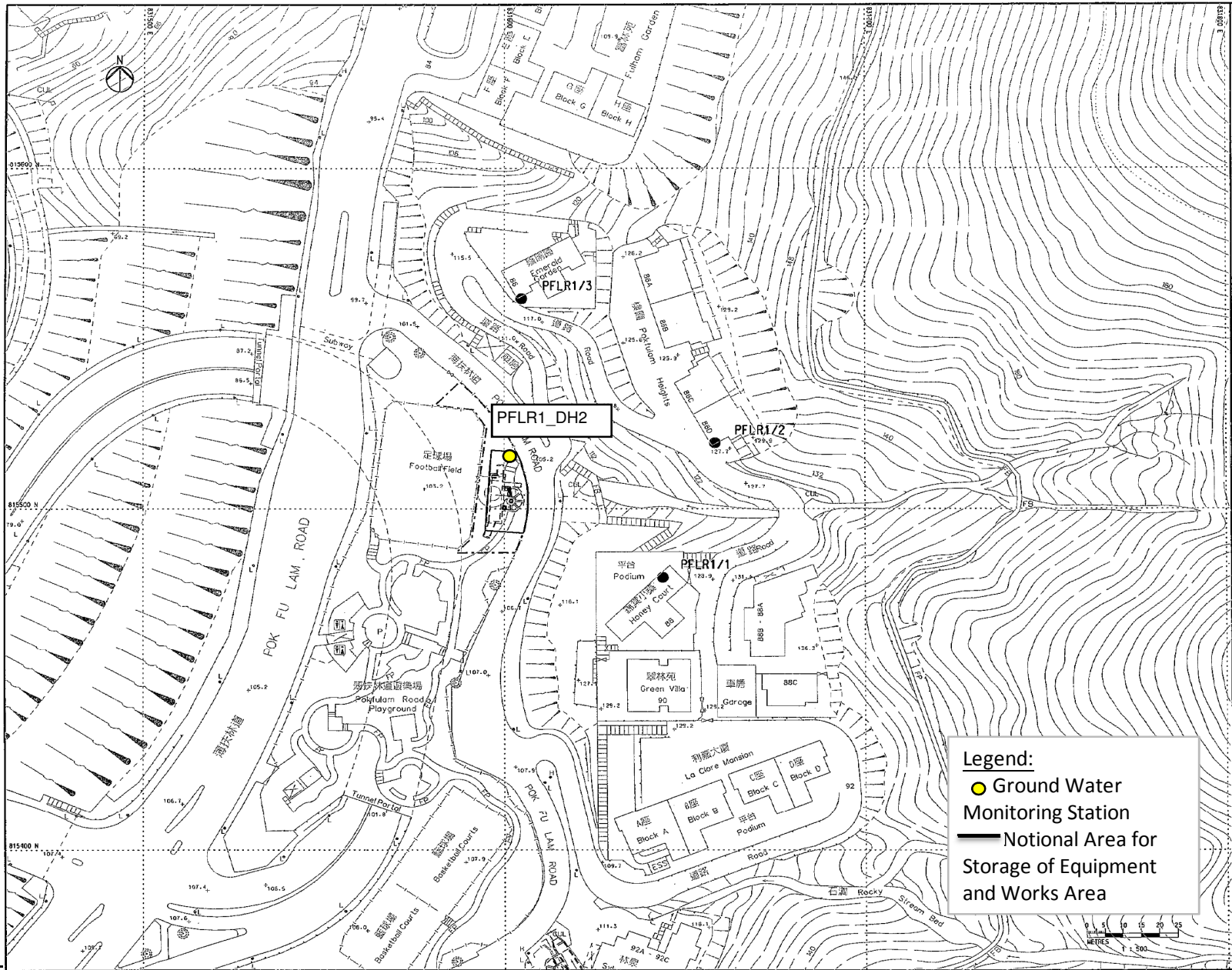
Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intake TP5)
 Location of ground water level Monitoring Station

Scale	N.T.S	Project No.	MA8001
Date	Mar-10	Figure	4.2c





Title	Contract No. DC/2007/10		Scale	Project	CINOTECH
	Design and Construction of Hong Kong West Drainage Tunnel (Intake THR2)		N.T.S	No. MA8001	
	Location of ground water level Monitoring Station		Date	Figure	
			Mar-10	4.2d	



Title
 Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 (Intake PFLR1)
 Location of ground water level Monitoring Station

Scale	N.T.S	Project No.	MA8001
Date	Mar-10	Figure	4.2e



**APPENDIX A
CONSTRUCTION PROGRAMME**

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	Cal ID	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2012					
										JAN	FEB	MAR	APR	MAY	JUN
East & West Adit + Intake															
CC01 - PRELIMINARIES & GENERAL REQUIREMENTS															
Milestone															
General															
M1-1760	1.76-Acceptance of Monthly Report on TDMS(47M)	0	0		19MAR12*	2	0	0	-140						
M1-1770	1.77-Acceptance of Monthly Report on TDMS(48M)	0	0		19MAR12*	2	0	0	-110						
M1-1780	1.78-Acceptance of Monthly Report on TDMS(49M)	0	0		19MAR12*	2	0	0	-82						
M1-1790	1.79-Acceptance of Production of Video	0	0		19MAR12*	2	0	0	-82						
M1-1800	1.80-Acceptance of Slope Maintenance Manuals	0	0		19MAR12*	2	0	0	-140						
M1-1810	1.81-GEOCheckingCert.forAll Slopes&RelatingWall	0	0		19MAR12*	2	0	0	-140						
M1-1820	1.82-Subm. of Draft Operation&Maintenance Manual	0	0		19MAR12*	2	0	0	-263						
M1-1830	1.83-Approval of Final Operation&Maintenance Manual	0	0		19MAR12*	2	0	0	-82						
M1-1840	1.84-Training for Operation&Maintenance of HKWDT	0	0		19MAR12*	2	0	0	-82						
CC02 - DESIGN & DESIGN CHECKING OF THE WORKS															
Design Stage															
E&M															
D02355	Method Statement Submissions (EP)	30	30	20MAR12	18APR12	2	0	0	-301						
D02360	Statutory Submissions	91	15	25APR11A	18APR12	2	50	330	-270						
Milestone															
Design Submission															
M2-1130	2.13-DDA-Dropshaft Submission	0	0		19MAR12	2	0	0	-301						
M2-1250	2.25-Approval of As-built Records of Dropshafts	0	0		19MAR12	2	0	0	-301						
CC03-PART OF SECTION 1 OF THE WORKS(MAIN TUNNEL)															
Construction															
TBM Excavation (Western Tunnel)															
W1340	West Main Tunnel Leaky Cable Sys Instal-(MT)	72	43	16JAN12A	15MAY12	1	25	52	-85						
TBM Excavation (Eastern Tunnel)															
E1665	East Main Tunnel Leaky Cable Sys Instal-(MT)	51	27	21FEB12A	24APR12	1	50	24	-90						
E1655	Removal of Temp. Tunnel Rail	12	12	19APR12	04MAY12	1	0	0	-15						
CC04 - PART OF SECTION 1 OF THE WORKS (ADITS)															
Construction															
Adit Tunnel Excavation & Tunnel Lining - sec1															
QL1016	Junction with Main Tunnel - W0	25	12	09MAR12A	02APR12	1	50	9	-103						
QL2016	Leaky Cable Installation W0	22	22	03APR12	04MAY12	1	0	0	-103						
QL1017	Main Tunnel Insitu Lining - W0	75	55	25FEB12A	12JUN12	1	30	20	-83						
Adit Tunnel Excavation & Tunnel Lining - E5A															
QL107	Junction E5A to main tunnel	30	0	21FEB12A	10MAR12A	2	100	19	-52						
QL207	Leaky Cable Installation E5A	26	26	20MAR12	14APR12	2	0	0	-61						
QL110	Lining E5A (278m)	67	0	14JAN12A	03FEB12A	1	100	15	-34						
Adit Tunnel Excavation & Tunnel Lining - E5B															
QL1091	Intersection E5B/E5A	30	0	14JAN12A	05MAR12A	1	100	41	-126						
QL2091	Leaky Cable Installation E5B	8	8	20MAR12*	28MAR12	1	0	0	-115						
QL108	Stilling chamber Lining Ach 1&2- E5B	36	4	20MAY11A	23MAR12	1	95	250	-222						
Adit Tunnel Excavation & Tunnel Lining - MB16															
QL115	Junction main tunnel MB16	44	0	03DEC11A	06FEB12A	1	100	50	-138						
QL215	Leaky Cable Installation MB16	9	9	20MAR12	29MAR12	1	0	0	-114						
Adit Tunnel Excavation & Tunnel Lining - MBD2															
QL120	Junction main tunnel MBD2	30	0	14JAN12A	15FEB12A	1	100	25	-16						
QL210	Leaky Cable Installation MBD2	13	13	20MAR12	03APR12	1	0	0	-46						
QL1191	Turning Bay	30	0	21JAN12A	25FEB12A	1	100	28	-154						
Adit Tunnel Excavation & Tunnel Lining - E7															
QL124	Junction main tunnel E7	30	0	03FEB12A	24FEB12A	2	100	22	-88						
QL224	Leaky Cable Installation E7	17	17	23MAR12	08APR12	2	0	0	-115						
QL125	Lining E7 Part 2 (149m)	56	3	21NOV11A	22MAR12	1	98	97	-118						
QL130	Stilling chamber Lining(Arch & Roof) - E7	24	0	19DEC11A	20FEB12A	1	100	49	-126						
QL1221	Turning bay E7	30	0	21JAN12A	14MAR12A	1	100	43	-215						
Adit Tunnel Excavation & Tunnel Lining - THR2															
QL1291	Junction main tunnel THR2	30	0	11NOV11A	03MAR12A	1	100	92	-53						
QL2291	Leaky Cable Installation THR2	10	10	20MAR12	30MAR12	1	0	0	-68						
QL129	Turning bay THR2	30	0	17SEP11A	04FEB12A	1	100	113	-133						
Adit Tunnel Excavation & Tunnel Lining - GL1															
QL135	Intersection GL1/HR1	30	7	08MAR12A	27APR12	2	75	12	-68						
QL138	Junction main tunnel GL1	30	30	20MAR12	18APR12	2	0	0	-35						
QL238	Leaky Cable Installation GL1	13	13	19APR12	01MAY12	2	0	0	-35						
QL136	Lining GL1 - GL1 to HR1 Intersection (56m)	35	0	16NOV11A	21JAN12A	1	100	55	-35						
QL1361	Lining GL1-HR1 Intersection to Main Tunnel(126m)	76	0	23JAN12A	20FEB12A	2	100	29	-31						
Adit Tunnel Excavation & Tunnel Lining - HR1															
QL2341	Leaky Cable Installation HR1	14	14	29MAR12	11APR12	2	0	0	-43						
QL1341	Lining HR1 (223m)	68	8	24OCT11A	28MAR12	1	90	121	-37						
QL139	Turning bay HR1	30	30	20MAR12*	27APR12	1	0	0	-128						
Adit Tunnel Excavation & Tunnel Lining - DG1															
QL143	Junction main tunnel DG1	30	12	17MAR12A	05APR12	2	75	3	-52						
QL243	Leaky Cable Installation DG1	13	13	06APR12	18APR12	2	0	0	-52						
QL145	Lining DG1 Part 2 (106m)	51	0	24NOV11A	10MAR12A	1	100	87	-102						

Start Date	30NOV07	Early Bar	203A	Sheet 1 of 10	WORKS PROGRAMME APPROVAL HISTORY			
Finish Date	03JAN13	Last Month Progress 202A			Date	Revision	Checked	Approved
Data Date	20MAR12	Progress Bar			13JAN09	Approved Works Programme # 1	SOR	804B
Run Date	12APR12 14:56	Critical Activity			27MAR09	Approved Works Programme # 2	SOR	9032
			10DEC10 Approved Works Programme # 3 SOR 9116					
			01MAR10 Approved Works Programme # 4 SOR 003A					
			25FEB11 Approved Works Programme # 5 SOR 301F					
			29JUN11 Approved Works Programme # 6 SOR WP6C					

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Design & Construction of HK, West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
MAR /2012 MONTHLY REPORT

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	Cal ID	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2012					
										JAN	FEB	MAR	APR	MAY	JUN
Adit Tunnel Excavation & Tunnel Lining - DG1															
QL141	Stilling chamber Lining Arch 1- DG1	33	0	08DEC11A	10FEB12A	1	100	50	-161						
QL144	Turning bay DG1	30	5	05MAR12A	24MAR12	1	80	13	-154						
Adit Tunnel Excavation & Tunnel Lining - BR4															
QL096	Junction main tunnel BR4	36	36	20MAR12	07MAY12	1	0	0	-54						
QL196	Leaky Cable Installation BR4	20	20	08MAY12	30MAY12	1	0	0	-54						
QL095	Lining BR4 - (373m)	45	8	09JAN12A	28MAR12	1	88	58	-26						
QL097	Turning bay BR4	30	0	20JAN12A	01FEB12A	1	100	8	-28						
Adit Tunnel Excavation & Tunnel Lining - W1															
QL091	Junction main tunnel W1	36	0	17FEB12A	05MAR12A	1	100	15	10						
QL291	Leaky Cable Installation W1	11	11	20MAR12	31MAR12	1	0	0	-2						
QL090	Lining W1 (155m)	43	10	21NOV11A	30MAR12	1	90	97	-84						
QL092	Turning bay W1	30	0	17FEB12A	03MAR12A	1	100	14	-50						
Adit Tunnel Excavation & Tunnel Lining - BR5															
QL083	Intersection BR6 / BR5 (14m)	29	29	27MAR12	05MAY12	1	0	0	-49						
QL283	Leaky Cable Installation BR5	6	6	07MAY12	12MAY12	1	0	0	-49						
QL0821	Lining BR5 (11m)	4	6	19MAR12A	26MAR12	1	50	1	-49						
QL082	Stilling chamber Lining - BR5	36	0	22DEC11A	31JAN12A	1	100	29	3						
Adit Tunnel Excavation & Tunnel Lining - BR6															
QPS145100	Insitu Lining & Grouting, 6m (BR6)	6	6	16APR12	21APR12	1	0	0	-118						
QL086	Junction main tunnel BR6	36	36	21MAY12	03JUL12	1	0	0	-106						
QL084	Lining BR6 (frm BR6 back to BR5) F1 - (84m)	27	13	20MAR12A	11MAY12	1	50	0	-106						
QL085	Lining BR6 (frm BR6 back to BR5) F2 - (84m)	26	26	30APR12	30MAY12	1	0	0	-120						
QL0871	Lining BR6 - (from BR5 to Main Tunnel) F1 (178m)	39	39	12MAY12	27JUN12	1	0	0	-106						
QL0872	Lining BR6 - (from BR5 to Main Tunnel) F2 (178m)	32	32	31MAY12	09JUL12	1	0	0	-120						
QHS14049	Stilling Chamber Excavation Excavation (BR6)	18	0	12DEC11A	03FEB12A	1	100	41	-91						
QL081	Stilling chamber Lining - BR6	30	19	07MAR12A	14APR12	1	30	11	-118						
QL087	Turning bay BR6	30	27	16MAR12A	24APR12	1	5	3	-121						
Adit Tunnel Excavation & Tunnel Lining - W3															
QL078	Junction main tunnel W3	36	36	20MAR12	07MAY12	1	0	0	-47						
QL278	Leaky Cable Installation W3	17	17	08MAY12	26MAY12	1	0	0	-47						
QL077	Lining W3 (296m)	45	0	23DEC11A	28FEB12A	1	100	52	-12						
QL079	Turning bay W3	30	7	16FEB12A	27MAR12	1	75	28	-100						
Adit Tunnel Excavation & Tunnel Lining - B2															
QL074	Junction main tunnel B2	36	33	16MAR12A	03MAY12	1	5	3	-55						
QL274	Leaky Cable Installation B2	15	15	04MAY12	21MAY12	1	0	0	-55						
QL073	Lining B2 (250m)	54	0	14DEC11A	27FEB12A	1	100	59	-40						
QL075	Turning bay B2	30	0	22NOV11A	17FEB12A	1	100	70	-2						
Adit Tunnel Excavation & Tunnel Lining - MA14															
QL070	Junction main tunnel MA14	36	14	12MAR12A	05APR12	1	50	7	-15						
QL279	Leaky Cable Installation MA14	8	8	10APR12	18APR12	1	0	0	-15						
QL069	Lining MA14 (63m)	23	0	06FEB12A	27FEB12A	1	100	19	12						
Adit Tunnel Excavation & Tunnel Lining - MA15															
QL066	Junction main tunnel MA15	36	0	12NOV11A	20JAN12A	1	100	57	-20						
QL266	Leaky Cable Installation MA15	8	8	20MAR12	28MAR12	1	0	0	-67						
Adit Tunnel Excavation & Tunnel Lining - MA17															
QL062	Junction main tunnel MA17	36	36	16APR12	29MAY12	1	0	0	-66						
QL262	Leaky Cable Installation MA17	8	8	30MAY12	07JUN12	1	0	0	-66						
QL061	Lining MA17 (73m)	23	23	29MAR12	30APR12	1	0	0	-66						
Adit Tunnel Excavation & Tunnel Lining - M3															
QL058	Junction main tunnel M3	36	0	03JAN12A	10FEB12A	1	100	31	-6						
QL258	Leaky Cable Installation M3	8	8	20MAR12	28MAR12	1	0	0	-38						
Adit Tunnel Excavation & Tunnel Lining - TP789															
QL054	Junction main tunnel TP789	36	0	22DEC11A	01FEB12A	1	100	30	-56						
QL254	Leaky Cable Installation TP789	6	6	20MAR12	26MAR12	1	0	0	-96						
Adit Tunnel Excavation & Tunnel Lining - TP5															
QL049	Junction main tunnel TP5	36	0	06FEB12A	24FEB12A	1	100	17	-134						
QL249	Leaky Cable Installation TP5	9	9	20MAR12	29MAR12	1	0	0	-114						
QL048	Lining TP5 (101m)	45	0	30MAY11A	04FEB12A	1	100	205	-153						
Adit Tunnel Excavation & Tunnel Lining - TP4															
QL245	Leaky Cable Installation TP4	7	7	20MAR12	27MAR12	1	0	0	-114						
Adit Tunnel Excavation & Tunnel Lining - W5															
QL036	Intersection CR1 / W5	36	36	23MAY12	05JUL12	1	0	0	-106						
QL039	Junction main tunnel W5	30	30	20MAR12	27APR12	1	0	0	-95						
QL239	Leaky Cable Installation W5	22	22	08JUN12	05JUL12	1	0	0	-105						
QL0382	Lining W5 -CR1 Junction to Main Tunnel F10(153m)	21	21	14MAY12	06JUN12	1	0	0	-104						
S240580	Stilling Chamber Enlargement-(W5)	26	0	15JUL11A	25FEB12A	1	100	185	-192						
QL034	Stilling chamber Lining - W5	36	36	20MAR12	07MAY12	1	0	0	-189						
QL041	Turning bay W5	30	0	13FEB12A	14MAR12A	1	100	27	-126						
Adit Tunnel Excavation & Tunnel Lining - CR1															
QL040	Turning bay CR1	30	30	29MAY12	04JUL12	1	0	0	-106						
Adit Tunnel Excavation & Tunnel Lining - RR1															
QL0251	Adit stub Lining	7	7	22MAY12	29MAY12	1	0	0	-129						
QL028	Lining RR1 (317m)	45	45	30MAY12	23JUL12	1	0	0	-129						

JAN	FEB	MAR	APR	MAY	JUN
2012					

Start Date 30NOV07
Finish Date 03JAN13
Data Date 20MAR12
Run Date 12APR12 14:56

- █ Early Bar
- █ Last Month Progress 202A
- █ Progress Bar
- █ Critical Activity

203A Sheet 2 of 10

Design & Construction of HK, West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
MAR/2012 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY			
Date	Revision	Checked	Approved
13JAN09	Approved Works Programme # 1	SOR	804B
27MAR09	Approved Works Programme # 2	SOR	9032
10DEC10	Approved Works Programme # 3	SOR	9116
01MAR10	Approved Works Programme # 4	SOR	003A
25FEB11	Approved Works Programme # 5	SOR	301F
29JUN11	Approved Works Programme # 6	SOR	WP6C

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	Cal ID	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2012					
										JAN	FEB	MAR	APR	MAY	JUN
Adit Tunnel Excavation & Tunnel Lining - RR1															
S260385	Still Chamber Excavation & Enlargement	18	12	18JUL11A	02APR12	1	95	202	-239						
QL025	Stilling chamber Lining - RR1	36	36	03APR12	21MAY12	1	0	0	-239						
Adit Tunnel Excavation & Tunnel Lining - W8															
QL027	Intersection RR1 / W8	36	36	20MAR12	07MAY12	1	0	0	-51						
QL227	Leaky Cable Installation W8	15	15	08MAY12	24MAY12	1	0	0	-51						
QL0261	Lining W8 (238m)	57	0	12DEC11A	10MAR12A	1	100	72	-62						
Adit Tunnel Excavation & Tunnel Lining - P5															
QL016	Intersection HKU1 / P5	36	36	20MAR12	07MAY12	1	0	0	-158						
QL015	Intersection W10 / P5	36	36	12JUN12	25JUL12	1	0	0	-199						
QL021	Junction main tunnel P5	36	36	12JUN12	25JUL12	1	0	0	-158						
QL019	Lining P5 big section 139 m	36	36	08MAY12	18JUN12	1	0	0	-158						
QL0122	Lining P5 normal 275m W10 - to enlarged Junction	39	39	30MAR12	21MAY12	1	0	0	-145						
QL0121	Lining P5 normal 332m up to W10 Junction	55	49	13MAR12A	01JUN12	1	5	6	-199						
S280580	Stilling Chamber Enlargement-(P5)	18	9	22AUG11A	29MAR12	1	98	172	-205						
QL022	Turning bay P5	30	12	27FEB12A	17APR12	1	50	19	-187						
Adit Tunnel Excavation & Tunnel Lining - W10															
QL2131	Leaky Cable Installation W10	5	5	08JUN12	13JUN12	1	0	0	-177						
QL0131	Lining W10 (0m)	5	5	02JUN12	07JUN12	1	0	0	-199						
QL013	Stilling chamber Lining - W10	36	0	04JAN12A	02FEB12A	1	100	23	-104						
Adit Tunnel Excavation & Tunnel Lining - HKU1															
QL223	Leaky Cable Installation HKU1	15	15	20MAR12	10APR12	1	0	0	-114						
Adit Tunnel Excavation & Tunnel Lining - PFLR1															
QL204	Leaky Cable Installation PLFR 1	6	6	20MAR12	26MAR12	1	0	0	-114						
QL004	Lining PLFR 1 (8m)	15	0	24FEB12A	02MAR12A	1	100	7	-123						
Adit Tunnel Excavation & Tunnel Lining - SM1															
QL002	Intersection PLFR 1 / SM 1	36	0	01FEB12A	07MAR12A	1	100	31	-58						
QL006	Junction main tunnel SM1	36	35	19MAR12A	05MAY12	1	5	1	-103						
QL206	Leaky Cable Installation SM1	25	25	07MAY12	04JUN12	1	0	0	-103						
QL0051	Lining SM1 -SM1-PFLR1 Junction-Main Tunnel(354m)	33	11	30DEC11A	31MAR12	1	90	65	-115						
Milestone															
Section 1 (Adits)															
M41050	4.005-25% Completion of Lining (Adit E5A)	0	0		07FEB12A	2	100	0	-183	◆ MC (132)					
M41060	4.006-50% Completion of Lining (Adit E5A)	0	0		07FEB12A	2	100	0	-116	◆ MC (132)					
M41070	4.007-75% Completion of Lining (Adit E5A)	0	0		07FEB12A	2	100	0	-83	◆ MC (132)					
M41080	4.008-100% Lining & Stilling Chamber (Adit E5A)	0	0		07FEB12A	2	100	0	-50	◆ MC (132)					
M41090	4.009-Junction Between M.Tunnel & Adit(Adit E5A)	0	0		08MAR12A	2	100	0	-50	◆ MC (133)					
M41120	4.012-Junction Between M.Tunnel & Adit(Adit MB16)	0	0		19MAR12	2	0	0	-214	◆ MC (132)					
M41170	4.017-Junction Between M.Tunnel&Adit(Adit MBD2)	0	0		07FEB12A	2	100	0	-11	◆ MC (132)					
M41220	4.022-Junction Between M.Tunnel&Adit(Adit E7)	0	0		07FEB12A	2	100	0	-71	◆ MC (132)					
M41250	4.025-Junction Between M.Tunnel&Adit(THR2)	0	0		07FEB12A	2	100	0	-41	◆ MC (132)					
M41280	4.028-50% Completion of Lining (Adit GL1)	0	0		08MAR12A	2	100	0	-91	◆ MC (133)					
M41290	4.029-100% Lining & Stilling Chamber(Adit GL1)	0	0		08MAR12A	2	100	0	-48	◆ MC (133)					
M41300	4.030-Junction Between M.Tunnel&Adit(Adit GL1)	0	0		08MAR12A	2	100	0	6	◆ MC (133)					
M41340	4.034-100% Lining & Stilling Chamber(Adit DG1)	0	0		07FEB12A	2	100	0	-94	◆ MC (132)					
M41350	4.035-Junction Between M.Tunnel&Adit(Adit DG1)	0	0		05APR12	2	0	0	-52	◆ MC (132)					
M41420	4.042-Junction Between M.Tunnel & Adit (Adit W0)	0	0		12JUN12	2	0	0	-104	◆ MC (132)					
M41460	4.046-35% Completion of Lining(Adit BR4)	0	0		08MAR12A	2	100	0	-60	◆ MC (133)					
M41470	4.047-70% Completion of Lining(Adit BR4)	0	0		08MAR12A	2	100	0	-34	◆ MC (133)					
M41480	4.048-100% Lining & Stilling Chamber(Adit BR4)	0	0		08MAR12A	2	100	0	-10	◆ MC (133)					
M41490	4.049-Junction Between M.Tunnel & Adit (Adit BR4)	0	0		07MAY12	2	0	0	-70	◆ MC (132)					
M41530	4.053-100% Lining & Stilling Chamber(Adit W1)	0	0		07FEB12A	2	100	0	-53	◆ MC (132)					
M41540	4.054-Junction Between M.Tunnel & Adit (Adit W1)	0	0		08MAR12A	2	100	0	8	◆ MC (133)					
M41560	4.056-100% Lining&Stilling Chamber(Adit BR5)	0	0		26MAR12	2	0	0	-58	◆ MC (132)					
M41570	4.057-Junction Between Adit&Adit(Adit BR5)	0	0		05MAY12	2	0	0	-64	◆ MC (132)					
M41620	4.062-25% Completion of Lining (Adit BR6)	0	0		11MAY12	2	0	0	-135	◆ MC (132)					
M41630	4.063-50% Completion of Lining (Adit BR6)	0	0		30MAY12	2	0	0	-152	◆ MC (132)					
M41690	4.069-50% Completion of Lining (Adit W3)	0	0		08MAR12A	2	100	0	-71	◆ MC (133)					
M41700	4.070-100% Lining&Stilling Chamber(Adit W3)	0	0		08MAR12A	2	100	0	-23	◆ MC (133)					
M41710	4.071-Junction Between M.Tunnel&Adit(AditW3)	0	0		07MAY12	2	0	0	-62	◆ MC (132)					
M41740	4.074-50% Completion of Lining(Adit B2)	0	0		07FEB12A	2	100	0	-55	◆ MC (132)					
M41750	4.075-100% Lining&Stilling Chamber(Adit B2)	0	0		08MAR12A	2	100	0	-61	◆ MC (133)					
M41760	4.076-Junction Between M.Tunnel&Adit(Adit B2)	0	0		03MAY12	2	0	0	-71	◆ MC (132)					
M41780	4.078-100% Lining & Stilling Chamber(Adit MA14)	0	0		19MAR12	2	0	0	-7	◆ MC (132)					
M41790	4.079-Junction Between M.Tunnel&Adit(Adit MA14)	0	0		05APR12	2	0	0	-19	◆ MC (132)					
M41840	4.084-100% Lining&Stilling Chamber(Adit MA17)	0	0		30APR12	2	0	0	-83	◆ MC (132)					
M41850	4.085-Junction Between M.Tunnel&Adit(Adit MA17)	0	0		29MAY12	2	0	0	-84	◆ MC (132)					
M41880	4.088-Junction Between M.Tunnel&Adit(Adit M3)	0	0		07FEB12A	2	100	0	-4	◆ MC (132)					
M41910	4.091-Junction Between M.Tunnel&Adit(Adit TP789)	0	0		07FEB12A	2	100	0	-78	◆ MC (132)					
M41930	4.093-100% Lining&Stilling Chamber (Adit TP5)	0	0		07FEB12A	2	100	0	-192	◆ MC (132)					
M41940	4.094-Junction Between M.Tunnel&Adit(Adit TP5)	0	0		08MAR12A	2	100	0	-180	◆ MC (133)					
M42010	4.101-35% Completion of Lining (Adit W5)	0	0		13APR12	2	0	0	-181	◆ MC (132)					
M42020	4.102-70% Completion of Lining (Adit W5)	0	0		07FEB12A	2	100	0	-56	◆ MC (132)					

Start Date	30NOV07	Early Bar	203A	Sheet 3 of 10	WORKS PROGRAMME APPROVAL HISTORY			
Finish Date	03JAN13	Last Month Progress 202A			Date	Revision	Checked	Approved
Data Date	20MAR12	Progress Bar			13JAN09	Approved Works Programme # 1	SOR	804B
Run Date	12APR12 14:56	Critical Activity			27MAR09	Approved Works Programme # 2	SOR	9032
			10DEC10 Approved Works Programme # 3 SOR 9116					
			01MAR10 Approved Works Programme # 4 SOR 003A					
			25FEB11 Approved Works Programme # 5 SOR 301F					
			29JUN11 Approved Works Programme # 6 SOR WP6C					

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Design & Construction of HK. West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
MAR /2012 MONTHLY REPORT

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	Cal ID	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2012					
										JAN	FEB	MAR	APR	MAY	JUN
Section 1 (Adits)															
M42030	4.103-100% Lining&Stilling Chamber(Adit W5)	0	0		08MAR12A	2	100	0	-38						
M42040	4.104-Junction Between M.Tunnel&Adit(Adit W5)	0	0		27APR12	2	0	0	-120						
M42080	4.108-100% Lining&Stilling Chamber(Adit CR1)	0	0		08MAR12A	2	100	0	-145						
M42090	4.109-Junction Between Adit and Adit(Adit CR1)	0	0		19MAR12	2	0	0	-108						
M42100	4.110-50% Completion of Excavation(Adit RR1)	0	0		19MAR12	2	0	0	-299						
M42170	4.117-50% Completion of Lining(Adit W8)	0	0		07FEB12A	2	100	0	-79						
M42180	4.118-100% Lining&Stilling Chamber (Adit W8)	0	0		08MAR12A	2	100	0	-77						
M42190	4.119-Junction Between Adit&Adit (Adit W8)	0	0		07MAY12	2	0	0	-67						
M42250	4.125-20% Completion of Lining (Adit P5)	0	0		19MAR12	2	0	0	-279						
M42260	4.126-40% Completion of Lining (Adit P5)	0	0		19MAR12	2	0	0	-239						
M42270	4.127-60% Completion of Lining (Adit P5)	0	0		19MAR12	2	0	0	-201						
M42280	4.128-80% Completion of Lining (Adit P5)	0	0		10APR12	2	0	0	-181						
M42290	4.129-100% Lining&Stilling Chamber(Adit P5)	0	0		21MAY12	2	0	0	-184						
M42320	4.132-100% Lining&Stilling Chamber (Adit W10)	0	0		19MAR12	2	0	0	-177						
M42330	4.133-Junction Between Adit&Adit(Adit W10)	0	0		07JUN12	2	0	0	-247						
M42380	4.138-Junction Between Adit&Adit(Adit HKU1)	0	0		19MAR12	2	0	0	-158						
M42400	4.140-100% Lining&Stilling Chamber(Adit PFLR1)	0	0		19MAR12	2	0	0	-168						
M42410	4.141-Junction Between Adit&Adit(Adit PFLR1)	0	0		08MAR12A	2	100	0	-157						
M42470	4.147-50% Completion of Lining(Adit SM1)	0	0		19MAR12	2	0	0	-164						
M42480	4.148-75% Completion of Lining(Adit SM1)	0	0		08MAR12A	2	100	0	-139						
M42490	4.149-100% Lining&Stilling Chamber(Adit SM1)	0	0		08MAR12A	2	100	0	-118						
M42500	4.150-Junction Between M.Tunnel&Adit(Adit SM1)	0	0		05MAY12	2	0	0	-134						
Adit Tunnel Excavation & Tunnel Lining - HR1															
M151030	15.03-50% Lining (Adit)	0	0		19MAR12	2	0	0	-68						
M151040	15.04-100% Lining&Stilling Chamber (Adit)	0	0		07FEB12A	2	100	0	7						
M151050	15.05-Junction Between Adit&Adit(Adit HR1)	0	0		27APR12	2	0	0	-73						
CC5-PART OF SECTION 1 OF THE WORKS (EAST PORTAL)															
Construction															
East Portal Assembly Chamber Lining Works															
E-1874	Lining (CH133-163)	67	24	29AUG11A	20APR12	1	75	166	-189						
E-1876	Lining (CH43-133)	44	0	14NOV11A	17MAR12A	1	100	102	-120						
East Portal Intake Chamber/Tunnel Finishing Work															
E-1950	Intake Chamber (CH27.5 to CH43)	40	0	03FEB12A	19MAR12A	1	100	39	-137						
E-1880	Intake Tunnel Lining (CH0 to CH20)	36	53	09JAN12A	26MAY12	1	50	58	-154						
East Portal Maintenance Chamber Finishing Works															
E-1904	Backfill slope	12	12	02MAY12	15MAY12	1	0	0	-190						
E-1902	Cast Center/end/retaining walls	18	31	17MAR12A	30APR12	1	0	2	-190						
E-1900	Cast Side wall & arch	57	0	07NOV11A	16MAR12A	1	100	107	-175						
E-1906	Slab and slope	18	18	16MAY12	05JUN12	1	0	0	-190						
E-1910	Wall & Roof slab - Rectangular portion(Ch2-Ch10)	24	24	06JUN12	05JUL12	1	0	0	-190						
East Portal River Channel Finishing Works															
E-2069	Access Ramp (B) along River Channel	30	30	13APR12	19MAY12	1	0	0	-40						
E-2064	Comp Connection Intake Tunnel & River Structure	33	0	09FEB12A	17MAR12A	1	100	33	-39						
E-2070	Demolition of upstream cofferdam	26	26	18APR12	19MAY12	1	0	0	-40						
E-2062	Excavation Intake entrance	43	0	20DEC11A	08FEB12A	1	100	38	-39						
E-2066	Installation of Stop log	12	12	20MAR12	02APR12	1	0	0	-40						
E-2068	Removal of Diversion Pipes and deck	11	11	03APR12	19APR12	1	0	0	-40						
East Portal Finishing Works															
E-1830	Access Ramp on Top of RW1 to RW3 Part 1	48	40	12MAR12A	11MAY12	1	10	7	-233						
E-1832	Access Ramp on Top of RW1 to RW3 Part 2	48	48	12MAY12	09JUL12	1	0	0	-233						
E-1943	Builder's Works(UG drainage/Landscaping/Reinst)	90	90	03APR12	25JUL12	1	0	0	-131						
E-1947	CCTV & Security System Installation	82	82	21APR12	30JUL12	1	0	0	-131						
E-1728	DSD Target application last manhole connection	0	0		19MAR12*	1	0	0	-228						
E-1724	FSD (FS501+FS314) Tentative Inspection Date	0	0		19MAR12*	1	0	0	-24						
E-1723	FSD (FS501+FS314)Application for Inspection	0	0		19MAR12*	1	0	0	-40						
E-1722	HEC Tentative Energization date	0	0		19MAR12*	1	0	0	-75						
E-1721	HEC submission & application for permanent power	0	0		19MAR12*	1	0	0	-228						
E-1941	Major E&M Equipment Deliveries	77	77	20MAR12	25JUN12	1	0	0	-196						
E-1955	Mechanical & Equipment Installation	69	69	02MAY12	23JUL12	1	0	0	-101						
E-1730	Permanent Slope Works	60	36	21FEB12A	07MAY12	1	50	24	-92						
E-1945	Plumbing and Drainage System Installation	52	52	21APR12	22JUN12	1	0	0	-131						
E-12729	Stoplog submission	0	0		19MAR12*	1	0	0	-203						
E-1726	WSD Submission & Application for permanent Water	0	0		19MAR12*	1	0	0	-228						
E-1727	WSD Tentative Permanent Water Supply	0	0		19MAR12*	1	0	0	-51						
Milestone															
Section 1 (Eastern Portal)															
M5-1020	5.02-Concrete Structure(River Channel Structure)	0	0		19MAR12	2	0	0	-47						
M5-1050	5.05-Concrete Structure(Access Ramp)	0	0		19MAY12	2	0	0	-53						
M5-1080	5.08-Lining(Intake Tunnel)	0	0		26MAY12	2	0	0	-193						
M5-1130	5.13-Lining(Intake Chamber)	0	0		26MAY12	2	0	0	-236						

JAN	FEB	MAR	APR	MAY	JUN
2012					

Start Date 30NOV07
Finish Date 03JAN13
Data Date 20MAR12
Run Date 12APR12 14:56

Early Bar
Last Month Progress 202A
Progress Bar
Critical Activity

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Design & Construction of HK, West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
MAR /2012 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY			
Date	Revision	Checked	Approved
13JAN09	Approved Works Programme # 1	SOR	804B
27MAR09	Approved Works Programme # 2	SOR	9032
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01MAR10	Approved Works Programme # 4	SOR	003A
25FEB11	Approved Works Programme # 5	SOR	301F
29JUN11	Approved Works Programme # 6	SOR	WP6C

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	Cal ID	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2012					
										JAN	FEB	MAR	APR	MAY	JUN
CC6-PART OF SECTION 1 OF THE WORKS (WEST PORTAL)															
Construction															
Western Portal Finishing Works															
WPR271	Access ramp	20	20	04MAY12	26MAY12	1	0	0	-106						
WPR237	Arch Tunl Struct-wall&roof(Ch10,578-Ch10,569) A1	36	0	01AUG11A	17MAR12A	1	100	189	-187						
WPR256	Dismantle noise enclosure and Adit equipment	21	21	16MAY12	08JUN12	1	0	0	-106						
WPR144	Handover Rect Trans Tunnel Adit Muck(Stg1) works	0	0	20MAR12		1	0	0	-109						
WPR254	Intermediate wall in Arch Tunnel	30	29	19MAR12A	26APR12	1	5	1	-72						
WPR225	Rect Trans Structure (Ch10,609-Ch10,596) R2	36	36	04JUN12	17JUL12	1	0	0	-102						
WPR222	Rect Trans Structure (Ch10,622-Ch10,609) R1	36	36	20APR12	02JUN12	1	0	0	-102						
WPR064	Removal 25t overhead gantry(120t crane mobilized)	8	8	20MAR12	28MAR12	1	0	0	-247						
WPR142	Reprovisioning works (After ADIT excavation)	30	23	12MAR12A	19APR12	1	10	7	-102						
WPR267	Sea works	38	38	19JUN12	03AUG12	1	0	0	-106						
WPR147	Site demolition	30	23	12MAR12A	19APR12	1	10	7	-102						
WPR258	Slope works & Retaining wall	36	36	29MAY12	11JUL12	1	0	0	-106						
WPR208	Still Basin Struc Ch10,668-Ch10,638base/Wall S3a	89	0	22OCT11A	20JAN12A	1	100	75	-42						
WPR209	Still Basin Struc Ch10,668-Ch10,638roof/backfS3a	78	0	05DEC11A	03MAR12A	1	100	72	2						
WPR216	Still Basin Struc(Ch10,638-Ch10,622roof/backfS3b	32	0	13DEC11A	21JAN12A	1	100	32	-21						
Milestone															
Section 1 (Western Portal)															
M6-1031	6.02-Concrete Structure(Stilling Basin) 100%	0	0		07FEB12A	2	100	0	28						
M6-1040	6.03-Backfilling&Reinstatement(Stilling Basin)	0	0		08MAR12A	2	100	0	-2						
M6-1090	6.08-Lining(Arch-shaped Transitional Tunnel)	0	0		07FEB12A	2	100	0	-10						
CC8 - SECTION 2 OF THE WORKS (PORTION E5A)															
Construction															
Intakes - Internal Structures (Stage 2)															
QHS020289	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(E5A)	33	7	18JAN12A	27MAR12	1	85	50	-58						
QHS020100	Local Intake Test & Commissioning - (E5A)	12	12	20MAR12	02APR12	1	0	0	-63						
QHS020285	Penstock Delivery - (E5A)	0	0	20MAR12*		1	0	0	-63						
QHS020291	VO Backdrop manholes & drains at LKS side - E5A	54	54	02MAY12	05JUL12	1	0	0	-58						
QHS020290	Water Mains diversion by others+Mod SiteSetup E5A	24	24	28MAR12	30APR12	1	0	0	-58						
CC9 - SECTION 3 OF THE WORKS (PORTION E5B)															
Construction															
Intakes - Internal Structures (Stage 2)															
QPSH03502	Finishing works / PS BW / Reinstatement (E5B)	54	0	18OCT11A	07FEB12A	1	100	91	-59						
Milestone															
Section 3 (Portion E5B)															
M91030	9.03-Junction Between Adit & Tunnel (Adit E5B)	0	0		07FEB12A	2	100	0	-130						
M91090	9.09-Slopeworks, Backfilling & Reinstatement	0	0		07FEB12A	2	100	0	-76						
CC11-SECTION 5 OF THE WORKS (PORTION MBD2)															
Construction															
Intakes - Internal Structures (Stage 2)															
QH0501031	BS/Penstock/Drain Dvn/TS - Stage 2-MBD2	33	12	27DEC11A	02APR12	1	90	68	-157						
QH050100	Local Intake Test & Commissioning - MBD2	12	10	19JAN12A	30MAR12	1	10	49	-155						
Pipe Laying															
QH050107	Carriageway and Permanent Reistatement	18	18	23MAY12	12JUN12	1	0	0	-123						
QH050105	Remain Drain works MBD2-SMH13 - Part 3	37	37	03APR12	22MAY12	1	0	0	-157						
QH050104	Remain Drain works MBD2-SMH24/SMH11-MBD2 -Part 2	36	0	27DEC11A	22FEB12A	1	100	46	-123						
QH050106	Remain Drain works SMH10-SMH11 - Final Stage	34	12	23FEB12A	02APR12	1	50	22	-86						
Milestone															
General															
M11-1080	11.08-Section5 MBD2 Handover to SO	0	0		12JUN12	2	0	0	-154						
Section 5 (Portion MBD2)															
M11-1060	11.06-Drainage Works & Reinstatement(D.Works)	0	0		12JUN12	2	0	0	-154						
M11-1070	11.07-Slopeworks, Backfilling & Reinstatement	0	0		12JUN12	2	0	0	-154						
CC12-SECTION 6 OF THE WORKS (PORTION E7)															
Construction															
Dropshaft - Excavation/ Shaft Lining															
QPS3000	Dropshaft-Position,Fix&Grout-16m, ID 2.3 (E7)	18	0	21FEB12A	23FEB12A	1	100	3	-62						
Intakes - Internal Structures (Stage 2)															
QHS060266	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(E7)	33	33	23APR12	01JUN12	1	0	0	-108						
QHS060267	Finishing works / PS BW / Reinstatement (E7)	18	18	02JUN12	22JUN12	1	0	0	-108						
QHS060265	Intake Permanent Structure(6 pours) (E7)	64	43	24FEB12A	15MAY12	1	33	21	-149						
QHS060100	Local Intake Test & Commissioning - (E7)	12	12	19MAY12	01JUN12	1	0	0	-108						
QHS060263	Penstock Delivery - (E7)	0	0	20MAR12*		1	0	0	-102						
Pipe Laying															
QHS060280	VO15-Stage 3cExcav/ELS&ConsSMH14(Downstream) (E7)	92	60	15DEC11A	04JUN12	1	40	76	-77						
QHS060273	VO15-Stage2bTrenchless betwn SMH14&E7MH Cons(E7)	72	4	31OCT11A	23MAR12	1	75	115	-101						
Milestone															
Section 6 (Portion E7)															
M121030	12.03-Lining (Dropshaft)	0	0		08MAR12A	2	100	0	-93						
M121050	12.05-Concrete Structure (Intake)	0	0		01JUN12	2	0	0	-136						
M121060	12.06-Drainage Works&Reinstatement (D.Works)	0	0		04JUN12	2	0	0	-97						

JAN	FEB	MAR	APR	MAY	JUN
2012					

Start Date	30NOV07	Early Bar
Finish Date	03JAN13	Last Month Progress 202A
Data Date	20MAR12	Progress Bar
Run Date	12APR12 14:56	Critical Activity

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Design & Construction of HK, West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
MAR /2012 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY			
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01MAR10	Approved Works Programme # 4	SOR	003A
25FEB11	Approved Works Programme # 5	SOR	301F
29JUN11	Approved Works Programme # 6	SOR	WP6C

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	Cal ID	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2012					
										JAN	FEB	MAR	APR	MAY	JUN
CC13-SECTION 7 OF THE WORKS (PORTION THR2)															
Construction															
Intakes - Internal Structures (Stage 2)															
QH070604	Penstock / Finishing/PS BW/Reinstatement (THR2)	37	0	17OCT11A	17FEB12A	1	100	101	-119						
CC14-SECTION 8 OF THE WORKS (PORTION GL1)															
Construction															
Intakes - Internal Structures (Stage 2)															
QHS080376	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(GL1)	32	0	28NOV11A	20JAN12A	1	100	44	-74						
QHS080377	Finishing works / PS BW / Reinstatement (GL1)	18	0	11JAN12A	17FEB12A	1	100	30	-77						
QHS080100	Local Intake Test & Commissioning - (GL1)	12	0	21JAN12A	07FEB12A	1	100	12	-86						
QHS080374	Penstock Delivery - (GL1)	0	0	21JAN12A		1	100	0	-125						
Milestone															
Section 8 (Portion GL1)															
M141060	14.6-Slopeworks, Backfilling & Reinstatement	0	0		07FEB12A	2	100	0	-87						
CC15-SECTION9 OF THE WORKS(PORTION HR1)															
Construction															
Dropshaft - Excavation/ Shaft Lining															
QS090350	Dropshaft-Position,Fix&Grout - 44.8m ID2.3 (HR1)	31	0	05MAR12A	15MAR12A	1	100	10	-119						
Intakes - Internal Structures (Stage 2)															
QPS090271	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(HR1)	36	24	16MAR12A	20APR12	1	10	3	-110						
QPS09272	Finishing works / PS BW / Reinstatement (HR1)	18	18	21APR12	14MAY12	1	0	0	-110						
QHS090100	Local Intake Test & Commissioning - (HR1)	12	12	03APR12	20APR12	1	0	0	-110						
QPS090269	Penstock Delivery - (HR1)	0	0	20MAR12*		1	0	0	-172						
Milestone															
General															
M151120	15.12-Section9 - HR1 Handover to SO	0	0		14MAY12	2	0	0	-143						
Section 9 (Portion HR1)															
M151080	15.08-Lining (Dropshaft)	0	0		19MAR12	2	0	0	-150						
M151100	15.10-Concrete Structure (Intake)	0	0		20APR12	2	0	0	-140						
M151110	15.11-Slopeworks, Backfilling & Reinstatement	0	0		14MAY12	2	0	0	-143						
CC16-SECTION 10 OF THE WORKS (PORTION DG1)															
Construction															
Dropshaft - Excavation/ Shaft Lining															
QS100350	Dropshaft-Position,Fix&Grout - 112m ID1.5 (DG1)	41	5	21FEB12A	24MAR12	1	65	24	-157						
Intakes - Internal Structures (Stage 2)															
QHS100381	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(DG1)	33	33	26MAR12	09MAY12	1	0	0	-157						
QHS100382	Finishing works / PS BW / Reinstatement (DG1)	18	18	10MAY12	30MAY12	1	0	0	-157						
QHS100100	Local Intake Test & Commissioning - (DG1)	12	12	24APR12	09MAY12	1	0	0	-157						
QHS100280	Penstock Delivery - (DG1)	0	0	20MAR12*		1	0	0	-172						
Milestone															
General															
M16-1070	16.07-Section 10 - DG1 Handover to SO	0	0		30MAY12	2	0	0	-197						
Section 10 (Portion DG1)															
M16-1030	16.03-Lining (Dropshaft)	0	0		24MAR12	2	0	0	-192						
M16-1050	16.05-Concrete Structure (Intake)	0	0		09MAY12	2	0	0	-197						
M16-1060	16.06-Slopeworks, Backfilling & Reinstatement	0	0		30MAY12	2	0	0	-197						
CC7 -PART OF SECTION 1 OF THE WORKS (PORTION W0)															
Construction															
Intakes - Internal Structures (Stage 2)															
QH3334	BS/Vortex/Penstock/Drain Dvn/TS Stage 2- (W0)	33	6	13FEB12A	29MAR12	1	80	31	-51						
QH3335	Finishing works / PS BW / Reinstatement (W0)	67	67	20MAR12	12JUN12	1	0	0	-60						
QH3336	Intake Backfill and compression - W0	3	3	20MAR12	22MAR12	1	0	0	-81						
QH3333	Intake Struct stage 1 & Access Shaft(6 pours)-W0	60	0	05DEC11A	11FEB12A	1	100	54	-50						
QH010100	Local Intake Test & Commissioning - (W0)	12	12	20MAR12	02APR12	1	0	0	-54						
QH3330	Penstock Delivery - (W0)	0	0	20MAR12*		1	0	0	-102						
Milestone															
General															
M7-1090	7.09-Section1 of Works within Portion W0 to SO	0	0		12JUN12	2	0	0	-77						
Section 1(W0,Adits,East & West Portal,Main Tuni)															
M7-1050	7.05-Lining(Access Shaft)	0	0		19MAR12	2	0	0	-174						
M7-1070	7.07-Concrete Structure (Intake)	0	0		29MAR12	2	0	0	-59						
M7-1080	7.08-Slopework, Backfilling & Reinstatement	0	0		12JUN12	2	0	0	-77						
CC17-SECTION 11 OF THE WORKS (PORTION BR4)															
Construction															
Dropshaft - Excavation/ Shaft Lining															
QS110741	Dropshaft-Position,Fix & Grout-58.5m ID1.5(BR4)	26	0	27DEC11A	20JAN12A	1	100	21	-20						
Intakes - Internal Structures (Stage 2)															
QHS110436	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(BR4)	33	10	21JAN12A	30MAR12	1	50	47	-44						
QHS1104363	Dismantle Loading Platform + Reinstatement (BR4)	51	51	19APR12	19JUN12	1	0	0	-44						
QHS1104361	Dismantle OHC (BR4)	12	12	31MAR12	18APR12	1	0	0	-44						
QHS170100	Local Intake Test & Commissioning - (BR4)	12	12	20MAR12	02APR12	1	0	0	-46						
QHS110434	Penstock Delivery - (BR4)	0	0	20MAR12*		1	0	0	-172						
Milestone															
General															
M171070	17.07-Section11 - BR4 Handover to SO	0	0		19JUN12	2	0	0	-54						

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13JAN09	Approved Works Programme # 1	SOR	804B	
27MAR09	Approved Works Programme # 2	SOR	9032	
10DEC10	Approved Works Programme # 3	SOR	9116	
01MAR10	Approved Works Programme # 4	SOR	003A	
25FEB11	Approved Works Programme # 5	SOR	301F	
29JUN11	Approved Works Programme # 6	SOR	WP6C	

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	Cal ID	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2012					
										JAN	FEB	MAR	APR	MAY	JUN
Section 11 (Portion BR4)															
M171030	17.03-Lining (Dropshaft)	0	0		07FEB12A	2	100	0	-42						
M171050	17.05-Concrete Structure (Intake)	0	0		08MAR12A	2	100	0	-29						
M171060	17.06-Slopedworks, Backfilling & Reinstatement	0	0		19JUN12	2	0	0	-54						
CC18-SECTION 12 OF THE WORKS (PORTION W1)															
Construction															
Intakes - External Structures (Stage1)															
QPS120251	Intake structure - Stage 1a+b(8 pours) - (W1)	61	0	22SEP11A	20JAN12A	1	100	99	-43						
Intakes - Internal Structures (Stage 2)															
QHS120224	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(W1)	36	12	21JAN12A	02APR12	1	15	47	-38						
QHS120225	Finishing works / PS BW / Reinstatement (W1)	18	18	03APR12	27APR12	1	0	0	-38						
QHS120100	Local Intake Test & Commissioning - (W1)	12	12	20MAR12	02APR12	1	0	0	-38						
QHS120222	Penstock Delivery - (W1)	0	0	20MAR12*		1	0	0	-102						
Milestone															
General															
M181070	18.07-Section12 - W1 Handover to SO	0	0		27APR12	2	0	0	-49						
Section 12 (Portion W1)															
M181050	18.05-Concrete Structure (Intake)	0	0		02APR12	2	0	0	-45						
M181060	18.06-Slopedworks, Backfilling & Reinstatement	0	0		27APR12	2	0	0	-49						
CC19-SECTION 13 OF WORKS (PORTION BR5)															
Construction															
Dropshaft - Excavation/ Shaft Lining															
QS130340	Dropshaft-Position,Fix&Grout - 71m ID1.5 (BR5)	40	0	09FEB12A	02MAR12A	1	100	20	-56						
Intakes - Internal Structures (Stage 2)															
QSH130301	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(BR5)	33	24	03MAR12A	20APR12	1	40	14	-61						
QSH130302	Finishing works / PS BW / Reinstatement (BR5)	18	18	21APR12	14MAY12	1	0	0	-61						
QHS130100	Local Intake Test & Commissioning - (BR5)	12	12	03APR12	20APR12	1	0	0	-61						
QSH130299	Penstock delivery - (BR5)	0	0	20MAR12*		1	0	0	-102						
Milestone															
General															
M19-1070	19.07-Section13 - BR5 Handover to SO	0	0		14MAY12	2	0	0	-79						
Section 13 (Portion BR5)															
M19-1030	19.03-Lining (Dropshaft)	0	0		08MAR12A	2	100	0	-78						
M19-1050	19.05-Concrete Structure (Intake)	0	0		20APR12	2	0	0	-76						
M19-1060	19.06-Slopedworks, Backfilling & Reinstatement	0	0		14MAY12	2	0	0	-79						
CC20-SECTION 14 OF THE WORKS (PORTION BR6)															
Construction															
Intakes - Internal Structures (Stage 2)															
QHS140297	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(BR6)	33	0	21DEC11A	20JAN12A	1	100	24	-74						
QHS140299	Finishing works / PS BW / Reinstatement (BR6)	36	32	28JAN12A	02MAY12	1	95	44	-117						
QHS140100	Local Intake Test & Commissioning - (BR6)	12	3	09FEB12A	22MAR12	1	75	34	-124						
QHS140296	Penstock Delivery - (BR6)	0	0	20MAR12*		1	0	0	-172						
Pipe Laying															
S140330	Cofferdam const, Excav & ELS at BR7	64	0	26SEP11A	20JAN12A	1	100	96	-100						
S140209	Construct Manhole SMH17	29	29	20MAR12	26APR12	1	0	0	-71						
S140210	Footpath Reinstatement	15	15	27APR12	16MAY12	1	0	0	-71						
S140340	Pipeline & MH construction SMH17 to BR7	64	41	08FEB12A	12MAY12	1	36	35	-118						
S140208	Precast pipe, grouting, connection to BR6	30	0	01NOV11A	07FEB12A	1	100	79	-36						
Milestone															
General															
M201090	20.09-Section14 - BR6 Handover to SO	0	0		07FEB12A	2	100	0	9						
Section 14 (Portion BR6)															
M201030	20.03-Lining (Dropshaft)	0	0		21APR12	2	0	0	-149						
M201050	20.05-Concrete Structure (Intake)	0	0		07FEB12A	2	100	0	-108						
M201070	20.07-100% P.Length of TrenchlessDrainageWorks	0	0		19MAR12	2	0	0	-160						
M201080	20.08-Slopedworks, Backfilling and Reinstatement	0	0		02MAY12	2	0	0	-151						
CC21-SECTION 15 OF THE WORKS (PORTION W3)															
Construction															
Intakes - Internal Structures (Stage 2)															
QHS150207	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(W3)	36	18	17FEB12A	13APR12	1	50	27	-33						
QHS150208	Finishing works / PS BW / Reinstatement (W3)	18	18	14APR12	07MAY12	1	0	0	-33						
QHS150205	HEC Cable diversion (W3)	36	0	05DEC11A	04FEB12A	1	100	48	-14						
QHS150206	Intake Permanent Structure(1 pour) Stage 1b(W3)	12	0	06FEB12A	16FEB12A	1	100	10	-12						
QHS210100	Local Intake Test & Commissioning - (W3)	12	12	27MAR12	13APR12	1	0	0	-33						
QL076	Stilling chamber Lining - (W3)	30	30	27DEC11A	27APR12	1	50	68	-153						
Milestone															
General															
M211070	21.07-Section15 - W3 Handover to SO	0	0		07MAY12	2	0	0	-46						
Section 15 (Portion W3)															
M211050	21.05-Concrete Structure (Intake)	0	0		13APR12	2	0	0	-43						
M211060	21.06-Slopedworks, Backfilling & Reinstatement	0	0		07MAY12	2	0	0	-46						
CC22-SECTION 16 OF THE WORKS (PORTION B2)															
Construction															
Intakes - Internal Structures (Stage 2)															
QHS160125	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(B2)	36	0	12DEC11A	14FEB12A	1	100	50	-7						

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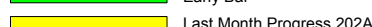


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Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	Cal ID	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2012					
										JAN	FEB	MAR	APR	MAY	JUN
Intakes - Internal Structures (Stage 2)															
QHS160126	Finishing works / PS BW / Reinstatement (B2)	17	5	15FEB12A	24MAR12	1	75	29	-24						
QHS160100	Local Intake Test & Commissioning - (B2)	12	0	01MAR12A	14MAR12A	1	100	12	-32						
Milestone															
General															
M22-1070	22.07-Section16 - B2 Handover to SO	0	0		08MAR12A	2	100	0	-12						
Section 16 (Portion B2)															
M22-1050	22.05-Concrete Structure (Intake)	0	0		07FEB12A	2	100	0	-1						
M22-1060	22.06-Slopedworks, Backfilling & Reinstatement	0	0		24MAR12	2	0	0	-28						
CC23-SECTION 17 OF THE WORKS (PORTION MA14)															
Construction															
Dropshaft - Excavation/ Shaft Lining															
QPS170360	Dropshaft-Position,Fix &Grout-153.6m ID1.5(MA14)	35	0	03FEB12A	29FEB12A	1	100	23	-40						
Intakes - Internal Structures (Stage 2)															
QHS170474	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(M14)	36	19	01MAR12A	14APR12	1	15	16	-39						
QHS170477	Dismantling of Overhead Gantry Crane (MA14)	7	7	30APR12	08MAY12	1	0	0	-39						
QHS170478	Dismantling of Steel Deck (MA14)	10	10	09MAY12	19MAY12	1	0	0	-39						
QHS170476	Finishing works / PS BW / Reinstatement (MA14)	18	18	16APR12	08MAY12	1	0	0	-39						
QHS170101	Local Intake Test & Commissioning - (M14)	12	12	28MAR12	14APR12	1	0	0	-39						
QHS170472	Penstock Delivery - (M14)	0	0	20MAR12*		1	0	0	-63						
Milestone															
General															
M23-1080	23.08-Section17 - MA14 Handover to SO	0	0		19MAY12	2	0	0	-52						
Section 17 (Portion MA14)															
M23-1050	23.05-Concrete Structure (Intake)	0	0		08MAY12	2	0	0	-53						
M23-1060	23.06-DrainageWorks&Reinstatement(Drainage Work)	0	0		08MAY12	2	0	0	-53						
M23-1070	23.07-Slopedworks, Backfilling & Reinstatement	0	0		19MAY12	2	0	0	-52						
CC24-SECTION 18 OF THE WORKS (PORTION MA15)															
Construction															
Intakes - Internal Structures (Stage 2)															
QHS180558	Finishing works / PS BW / Reinstatement (MA15)	36	0	16NOV11A	06FEB12A	1	100	65	-39						
CC25-SECTION 19 OF THE WORKS (PORTION MA17)															
Construction															
Adit Tunnel Excavation & Tunnel Lining - MA17															
QL060	Stilling chamber Lining - MA17	38	14	21FEB12A	05APR12	1	75	24	-88						
Dropshaft - Excavation/ Shaft Lining															
QPS190340	Dropshaft-Position,Fix&Grout -117.3m ID2.3(MA17)	48	48	08MAY12	04JUL12	1	0	0	-102						
Intakes - Internal Structures (Stage 2)															
QHS190509	Intake Structure (4 pous) Stage 1 (MA17)	60	36	21FEB12A	07MAY12	1	20	24	6						
QHS190510	Penstock Delivery - (MA17)	0	0	20MAR12*		1	0	0	-63						
QL059	Stabilisation shaft MA17	6	0	18JAN12A	11FEB12A	1	100	19	-79						
Milestone															
Section 19 (Portion MA17)															
M25-1020	25.02-Excavation (Dropshaft)	0	0		07FEB12A	2	100	0	-95						
CC26-SECTION 20 OF THE WORKS (PORTION M3)															
Construction															
Dropshaft - Excavation/ Shaft Lining															
QPS200370	Dropshaft-Position,Fix&Grout- 133.4m ID1.5 (M3)	37	0	22DEC11A	20JAN12A	1	100	23	0						
Intakes - Internal Structures (Stage 2)															
QHS200413	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(M3)	33	24	09MAR12A	20APR12	1	27	9	-38						
QHS200415	Dismantling Overhead Gantry (M3)	7	7	23APR12	02MAY12	1	0	0	-38						
QHS200414	Finishing works / PS BW / Reinstatement (M3)	15	15	13APR12	02MAY12	1	0	0	-38						
QHS200411	Intake Permanent Structure(4 pous) Stage 1 -M3	36	0	21JAN12A	08MAR12A	1	100	38	-83						
QHS200100	Local Intake Test & Commissioning - (M3)	12	12	03APR12	20APR12	1	0	0	-38						
QHS200410	Penstock Delivery - (M3)	0	0	20MAR12*		1	0	0	-102						
Milestone															
General															
M261016	26.07-Section20 - M3 Handover to SO	0	0		02MAY12	2	0	0	-51						
Section 20 (Portion M3)															
M261012	26.03-Lining (Dropshaft)	0	0		07FEB12A	2	100	0	-18						
M261014	26.05-Concrete Structure (Intake)	0	0		20APR12	2	0	0	-49						
M261015	26.06-Slopedworks, Backfilling & Reinstatement	0	0		02MAY12	2	0	0	-51						
CC27-SECTION 21 OF THE WORKS (PORTION TP789)															
Construction															
Intakes - Internal Structures (Stage 2)															
QHS210410	Finishing works / PS BW / Reinstatement (TP789)	18	0	24NOV11A	20FEB12A	1	100	70	-96						
QHS210101	Local Intake Test & Commissioning - (TP789)	12	0	07JAN12A	20JAN12A	1	100	12	-91						
QHS210411	OHC Hydraulic arm dismantling (TP789)	7	0	13JAN12A	20JAN12A	1	100	7	-66						
Milestone															
Section 21 (Portion TP789)															
M27-1060	27.06-Slopedworks, Backfilling & Reinstatement	0	0		07FEB12A	2	100	0	-98						
CC28-SECTION 22 OF THE WORKS (PORTION TP5)															
Construction															
Intakes - Internal Structures (Stage 2)															
QHS220340	Finishing works / PS BW / Reinstatement (TP5)	18	0	06JAN12A	13FEB12A	1	100	30	-115						

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Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	Cal ID	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2012					
										JAN	FEB	MAR	APR	MAY	JUN
Intakes - Internal Structures (Stage 2)															
QHS220100	Local Intake Test & Commissioning - (TP5)	6	0	14JAN12A	20JAN12A	1	100	6	-116						
Milestone															
General															
M28-1070	28.07-Section22 - TP5 Handover to SO	0	0		19MAR12	2	0	0	-171						
CC29-SECTION 23 OF THE WORKS (PORTION TP4)															
Construction															
Intakes - Internal Structures (Stage 2)															
QH230503	Finishing works / PS BW / Reinstatement -TP4	18	0	05DEC11A	20FEB12A	1	100	61	-119						
CC30-SECTION 24 OF THE WORKS (PORTION W5)															
Construction															
Intakes - External Structures (Stage1)															
QHS240345	Intake Structure (8 pours) Stage 1 (W5)	89	70	21FEB12A	15JUN12	1	10	24	-163						
Dropshaft - Excavation/ Shaft Lining															
QPS240550	Dropshaft-Position,Fix&Grout- 25m ID2.3 (W5)	14	14	16JUN12	04JUL12	1	0	0	-163						
CC31-SECTION 25 OF THE WORKS (PORTION CR1)															
Construction															
Intakes - External Structures (Stage1)															
S250300	Cofferdam Excav,ELS & Drain Divn -(CR1)	52	52	23MAY12	24JUL12	1	0	0	-250						
S250320	Install RBM steel platform -(CR1)	6	0	17JAN12A	26JAN12A	1	100	6	-75						
Adit Tunnel Excavation & Tunnel Lining - CR1															
QL035	Stilling chamber Lining - CR1	36	36	23MAY12	05JUL12	1	0	0	-106						
Dropshaft - Excavation/ Shaft Lining															
QS250546	Back Reaming & Demobilization - (CR1)	29	29	10APR12	15MAY12	1	0	0	-106						
QS250542	R BM Mobilization & Pilot Hole drilling - (CR1)	18	14	27JAN12A	05APR12	1	35	45	-106						
QS250530	RB Setup/Reaming/Demobilization(CR1) (99m)	47	41	27JAN12A	12MAY12	1	0	45	-104						
Intakes - Internal Structures (Stage 2)															
QHS250326	Penstock Delivery - (CR1)	0	0	20MAR12*		1	0	0	-63						
QL033	Stabilisation shaft CR1	6	6	16MAY12	22MAY12	1	0	0	-106						
Milestone															
Section 25 (Portion CR1)															
M31-1020	31.02-Excavation (Dropshaft)	0	0		07FEB12A	2	100	0	-38						
CC32-SECTION 26 OF THE WORKS (PORTION RR1)															
Construction															
Intakes - External Structures (Stage1)															
QHS260374	Stage 1 structure (5 pours) - (RR1)	62	14	09DEC11A	05APR12	1	80	81	-155						
Dropshaft - Excavation/ Shaft Lining															
QPS260580	Dropshaft-Position,Fix& Grout -72.8m ID1.5 (RR1)	23	23	22MAY12	16JUN12	1	0	0	-189						
Intakes - Internal Structures (Stage 2)															
QHS260375	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(RR1)	33	33	18JUN12	27JUL12	1	0	0	-189						
Milestone															
Section 26 (Portion RR1)															
M32-1030	32.03-Lining (Dropshaft)	0	0		16JUN12	2	0	0	-234						
CC33-SECTION 27 OF THE WORKS (PORTION W8)															
Construction															
Intakes - External Structures (Stage1)															
S270330	HDC Excavation & Temp Lining - (W8)	31	4	10DEC11A	23MAR12	1	95	80	-117						
Dropshaft - Excavation/ Shaft Lining															
QPS270440	Dropshaft-Position,fix & Grout - 31.5m ID1.5(W8)	15	15	24MAR12	14APR12	1	0	0	-112						
Intakes - Internal Structures (Stage 2)															
QHS270386	Intake Permanent Structure(3 pour) Stage 1b (W8)	30	30	15JUN12	21JUL12	1	0	0	-112						
QHS270388	Intake Permanent Structure(4 pour) Stage 1a (W8)	50	50	16APR12	14JUN12	1	0	0	-112						
QHS270387	Penstock Delivery - (W8)	0	0	20MAR12*		1	0	0	-63						
Milestone															
Section 27 (Portion W8)															
M33-1010	33.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		23MAR12	2	0	0	-143						
M33-1020	33.02-Excavation (Dropshaft)	0	0		07FEB12A	2	100	0	-98						
M33-1030	33.03-Lining (Dropshaft)	0	0		14APR12	2	0	0	-142						
CC34-SECTION 28 OF THE WORKS (PORTION P5)															
Construction															
Intakes - External Structures (Stage1)															
QHS280118	Cofferdam Excav+ELS+Temp Divern to+95.6mPD -(P5)	98	53	17DEC11A	26MAY12	1	20	74	-133						
QHS280120	Construct Intake Stage 1 (8 pours)- (P5)	81	81	28MAY12	31AUG12	1	0	0	-133						
QHS280123	Shaft Remedial works(Mech Excav still chbr)(P5)	46	46	02MAY12	25JUN12	1	0	0	-122						
QHS280122	Shaft Remedial works(rock dowel&Grabbing)(P5)	99	31	16NOV11A	30APR12	1	35	101	-122						
Intakes - Internal Structures (Stage 2)															
QHS280115	Penstock Delivery (P5)	0	0	20MAR12*		1	0	0	-63						
Milestone															
Section 28 (Portion P5)															
M341010	34.01-Pre-drilling & Grouting Works (Dropshaft)	0	0		19MAR12	2	0	0	-219						
M341040	34.04-Excavation (Intake)	0	0		26MAY12	2	0	0	-169						
CC35-SECTION 29 OF THE WORKS (PORTION W10)															
Construction															
Dropshaft - Excavation/ Shaft Lining															
QPS290370	Dropshaft-Position,Fix&Grout- 94.7m ID2.3 (W10)	38	0	17FEB12A	03MAR12A	1	100	14	-88						

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Data Date 20MAR12
Run Date 12APR12 14:56

- █ Early Bar
- █ Last Month Progress 202A
- █ Progress Bar
- █ Critical Activity

203A Sheet 9 of 10
Design & Construction of HK, West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
MAR /2012 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY			
Date	Revision	Checked	Approved
13JAN09	Approved Works Programme # 1	SOR	804B
27MAR09	Approved Works Programme # 2	SOR	9032
10DEC10	Approved Works Programme # 3	SOR	9116
01MAR10	Approved Works Programme # 4	SOR	003A
25FEB11	Approved Works Programme # 5	SOR	301F
29JUN11	Approved Works Programme # 6	SOR	WP6C

Act ID	Activity Description	Orig Dur	Rem Dur	Anticipated Start	Anticipated Finish	Cal ID	% Comp	Actual Duration	Works Prog # 6 WP6C EF Variance	2012					
										JAN	FEB	MAR	APR	MAY	JUN
Intakes - Internal Structures (Stage 2)															
QHS290371	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(W10)	33	20	05MAR12A	16APR12	1	20	13	-88						
QHS290373	Dismantling of OHC steel frame (W10)	5	5	10MAY12	15MAY12	1	0	0	-88						
QHS290372	Finishing works / PS BW / Reinstatement (W10)	18	18	17APR12	09MAY12	1	0	0	-88						
QHS290100	Local Intake Test & Commissioning - (W10)	12	12	29MAR12	16APR12	1	0	0	-88						
Milestone															
General															
M351070	35.07-Section29 - W10 Handover to SO	0	0		15MAY12	2	0	0	-110						
Section 29 (Portion W10)															
M351030	35.03-Lining (Dropshaft)	0	0		08MAR12A	2	100	0	-114	MC (133)◆					
M351050	35.05-Concrete Structure (Intake)	0	0		09MAY12	2	0	0	-113						
M351060	35.06-Slopeworks, Backfilling & Reinstatement	0	0		15MAY12	2	0	0	-110						
CC36-SECTION 30 OF THE WORKS (PORTION HKU1)															
Construction															
Intakes - Internal Structures (Stage 2)															
QHS300805	Finishing works / PS BW / Reinstatement (HKU1)	18	0	26NOV11A	08FEB12A	1	100	58	-99						
QHS300806	Steel Deck Dismantling (HKU1)	18	0	10DEC11A	20JAN12A	1	100	33	-68						
CC37-SECTION 31 OF THE WORKS (PORTION PFLR1)															
Construction															
Dropshaft - Excavation/ Shaft Lining															
QPS310330	Dropshaft-Position,Fix&Grout-56.4m ID2.3 (PFLR1)	24	0	17JAN12A	01FEB12A	1	100	11	-73						
Intakes - Internal Structures (Stage 2)															
QHS311009	BS/Vortex/Penstock/Drain Dvn/TS - Stage 2(PFLR1)	33	7	02FEB12A	27MAR12	1	75	40	-87						
QHS311010	Finishing works / PS BW / Reinstatement (PFLR1)	60	60	28MAR12	12JUN12	1	0	0	-87						
QHS310100	Local Intake Test & Commissioning - (PFLR1)	12	12	20MAR12	02APR12	1	0	0	-92						
Milestone															
General															
M371070	37.07-Section31 - PFLR1 Handover to SO	0	0		08MAR12A	2	100	0	-13	MC (133)◆					
Section 31 (Portion PFLR1)															
M371030	37.03-Lining (Dropshaft)	0	0		08MAR12A	2	100	0	-128	MC (133)◆					
M371050	37.05-Concrete Structure (Intake)	0	0		08MAR12A	2	100	0	-90	MC (133)◆					
M371060	37.06-Slopeworks, Backfilling & Reinstatement	0	0		12JUN12	2	0	0	-109						◆
CC39-SECTION 34 OF THE WORKS(MGMT & MAINTENANCE)															
Milestone															
Section 34(Mgmt &Maintenance of As-ConstrnStruct)															
M39-1010	39.01-Section34 of Works to Supervising Officer	0	0		19MAR12*	2	0	0	-19						

JAN	FEB	MAR	APR	MAY	JUN
2012					

Start Date 30NOV07
Finish Date 03JAN13
Data Date 20MAR12
Run Date 12APR12 14:56

- █ Early Bar
- █ Last Month Progress 202A
- █ Progress Bar
- █ Critical Activity

203A Sheet 10 of 10

Design & Construction of HK. West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
MAR /2012 MONTHLY REPORT

WORKS PROGRAMME APPROVAL HISTORY				
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13JAN09	Approved Works Programme # 1	SOR	804B	
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01MAR10	Approved Works Programme # 4	SOR	003A	
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29JUN11	Approved Works Programme # 6	SOR	WP6C	

**APPENDIX B
MONITORING REQUIREMENTS**

Appendix B - Environmental Impact Monitoring Requirements

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Air Quality	1 hour TSP	Three times / 6 days	<ul style="list-style-type: none"> • AQ1 (True Light Middle School of Hong Kong) • AQ2 (Outside Aegean Terrace) 	AQ1 – Canopy AQ2 – Roadside AQ3 – Roadside
	24 hour TSP	Once / 6 days	<ul style="list-style-type: none"> • AQ1 (True Light Middle School of Hong Kong) • AQ3 (Outside Site Office at Western Portal) 	

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Airborne Noise	L _{eq} , L ₉₀ & L ₁₀ at 30 minute intervals during (0700 to 1900 on normal weekdays)	Once per week	<ul style="list-style-type: none"> • NC1 (True Light Middle School of Hong Kong) • NC2 (The Legend) • NC3 (Outside Aegean Terrace) • NC4 (Man Yuen Garden) • NC5 (Blk D Villa Monte Rosa) • NC6 (Rosaryhill School) • NC7 (Buddist Li Ka Shing Care & Attention Home for the Elderly) • NC8 (Marymount Secondary School) • NC9 (117 Blue Pool Road) • NC10 (The Harbour View) • NC11 (Honey Court) • NC12 (Ying Wa Girl's School) • NC13 (Peaksville Court) • NC14 (Hong Kong Japanese School) • NC15a (12 Tung Shan Terrace) • NC16 (Raimondi College) • NC17 (Hong Kong Institute of 	<ul style="list-style-type: none"> • NC1 - Facade measurement • NC2 - Facade measurement • NC3 - Facade measurement • NC4 - Facade measurement • NC5 - Free field measurement • NC6 - Facade measurement • NC7 - Facade measurement • NC8 – Facade measurement • NC9 – Facade measurement • NC10 – Facade measurement

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
			Technology) • NC18 (Blk A, 80 Robinson Road) • NC19 (Villa Veneto)	<ul style="list-style-type: none"> • NC11 – Free field measurement • NC12 - Facade measurement • NC13 - Facade measurement • NC14 - Facade measurement • NC15a – Facade measurement • NC16 - Facade measurement • NC17- Facade measurement • NC18- Facade measurement • NC19 - Facade measurement

Remarks:

⁽¹⁾ – Conduct noise monitoring only when construction work is carried out.

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Ground Borne Noise	L _{eq} , L ₉₀ & L ₁₀ at 30 minute intervals during (0700 to 1900 on normal weekdays)	Once per week	<ul style="list-style-type: none"> • GNC8 (Raimondi College) 	<ul style="list-style-type: none"> • Ground floor inside the nearest building during the TBM construction work

Remarks:

⁽¹⁾ – Conduct noise monitoring only when TBM construction work is carried out.

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Water Quality	<ul style="list-style-type: none"> • Temperature (oC) • pH (pH unit) • Turbidity (NTU) • Water depth (m) • Salinity (mg/L) • Dissolved oxygen (DO) (mg/L and % of saturation) • Suspended solids (SS) (mg/L) 	Three times per week	<ul style="list-style-type: none"> • CE (830026E, 814956N) • CF (831778E, 812420N) • I1 (831088E, 813654N) • I2 (831105E, 813582N) • Intake A (831603E, 813044N) • Intake B (830606E, 814583N) 	<ul style="list-style-type: none"> • 3 water depths: 1m below water surface, mid-depth and 1m above sea bed. • If the water depth is less than 3m, mid-depth sampling only. • If the water depth is less than 6m, omit mid-depth sampling.

**APPENDIX C
ACTION AND LIMIT LEVELS FOR AIR
QUALITY, NOISE AND WAER QUALITY**

Appendix C - Action and Limit Levels

Table C-1 Action and Limit Levels for 1-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AQ1	345	500
AQ2	321	

Table C-2 Action and Limit Levels for 24-Hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AQ1	201	260
AQ3	156	

Table C-3 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75* dB(A)
0700-2300 hrs on holidays; and 1900-2300 hrs on all other days		60/65/70** dB(A)
2300-0700 hrs of next day		45/50/55** dB(A)

(*) reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

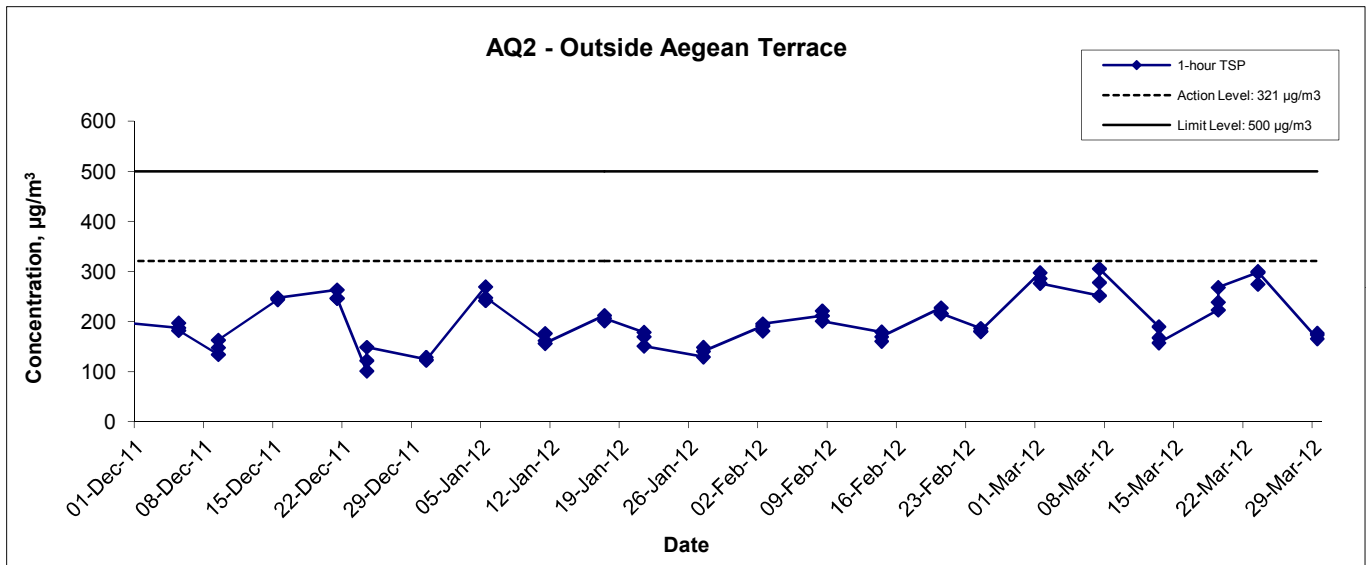
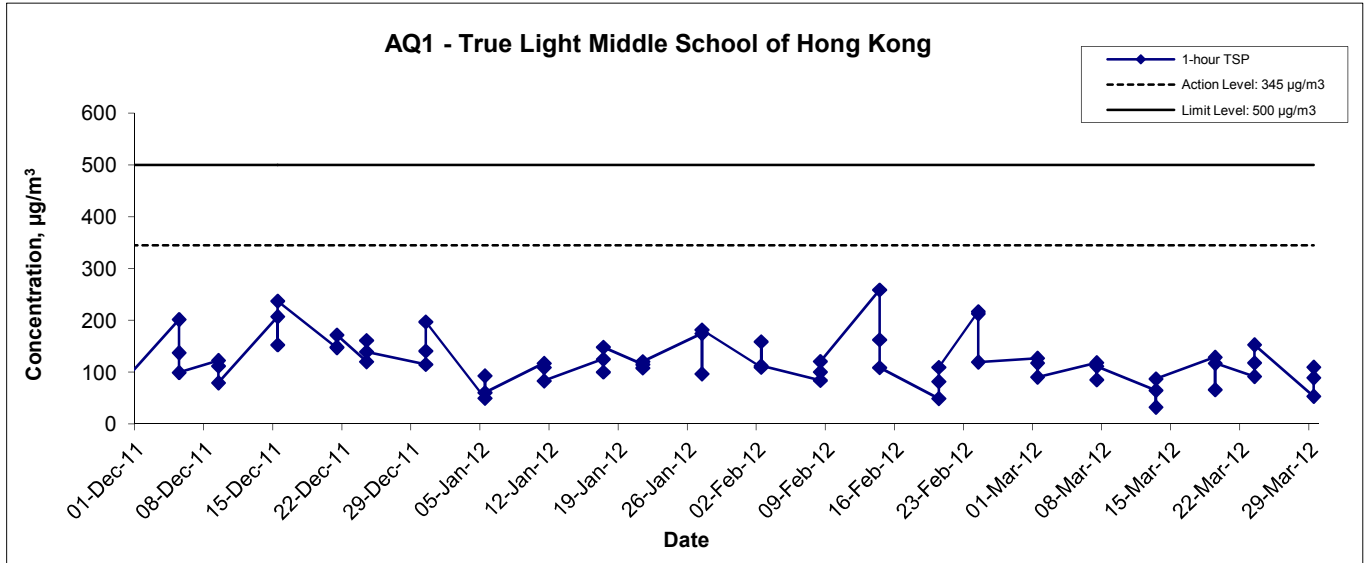
(**) to be selected based on Area Sensitivity Rating.

Table C-4 Action and Limit Levels for Water Quality

Parameter		Action	Limit
DO, mg/L	Surface and Middle	6.3	6.2
	Bottom	6.0	5.8
SS, mg/L		15.7 or 120% of upstream control station's SS at the same tide of the same day	16.4 or 130% of SS readings at the upstream control station at the same tide of same day and specific sensitive receiver water quality requirements
Turbidity, NTU		10.2 or 120% of upstream control station's turbidity at the same tide of the same day	11.1 or 130% of turbidity at the upstream control station at the same tide of same day

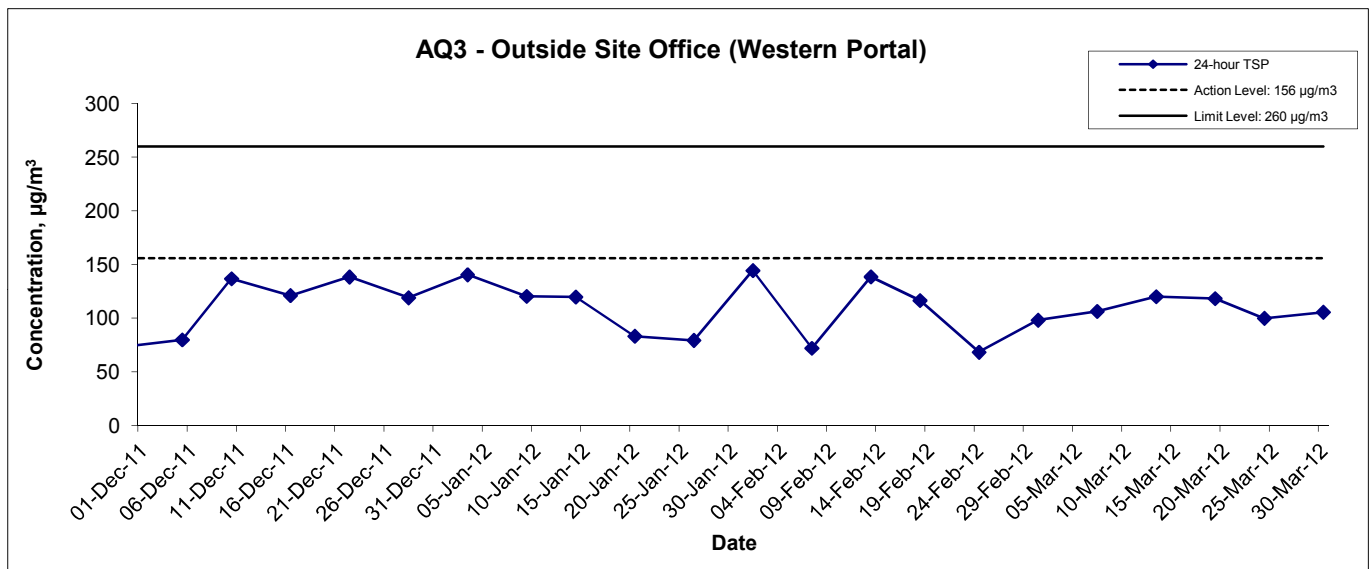
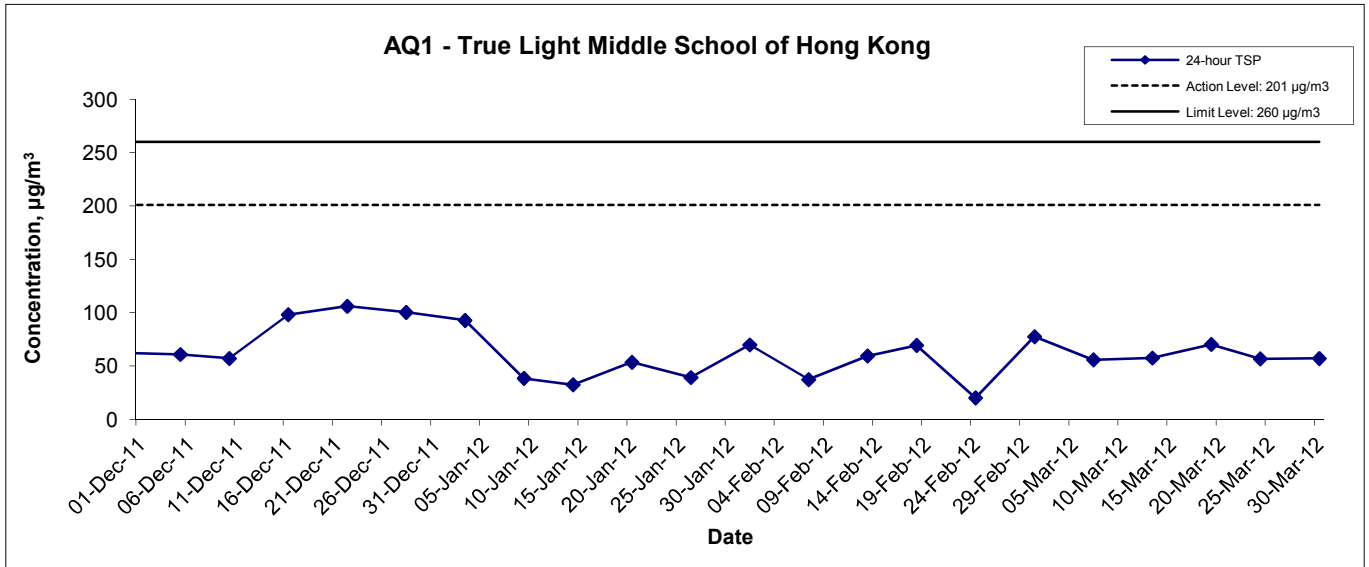
**APPENDIX D
GRAPHICAL PRESENTATION OF AIR
QUALITY MONITORING RESULTS**

1-hr TSP Concentration Levels



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Mar 12	Appendix D	

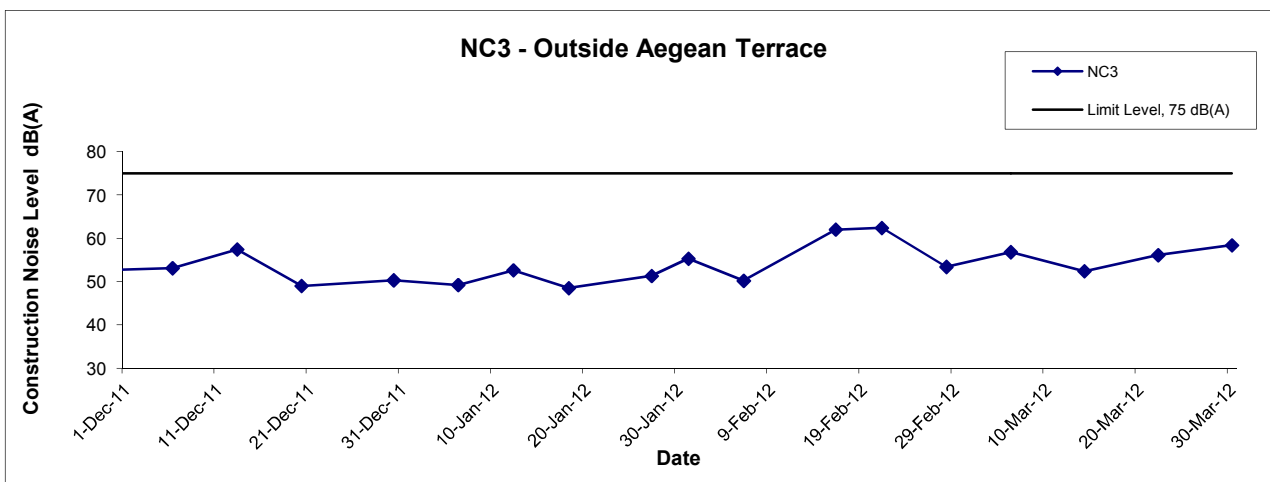
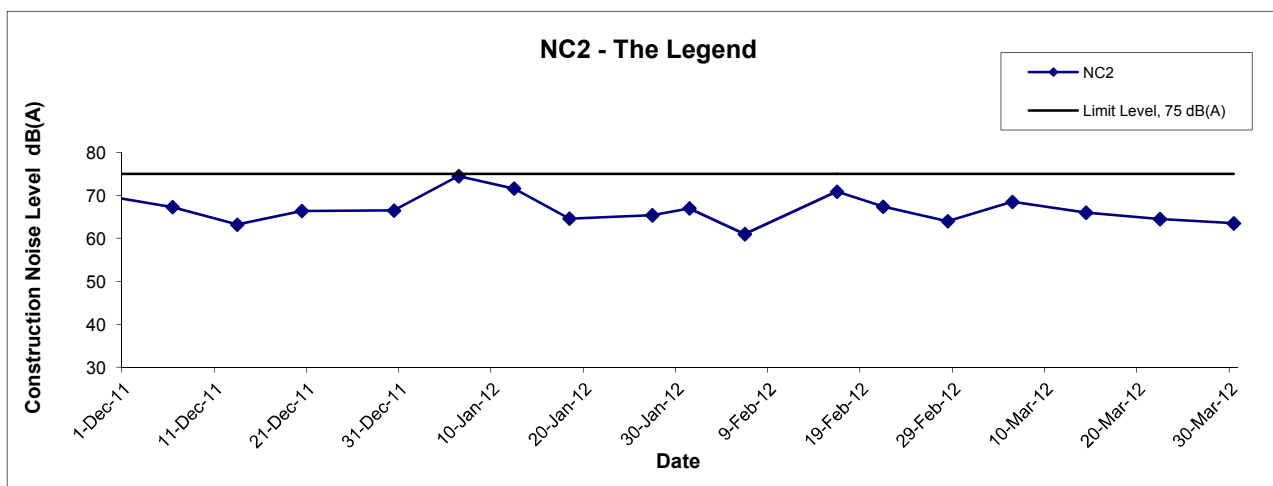
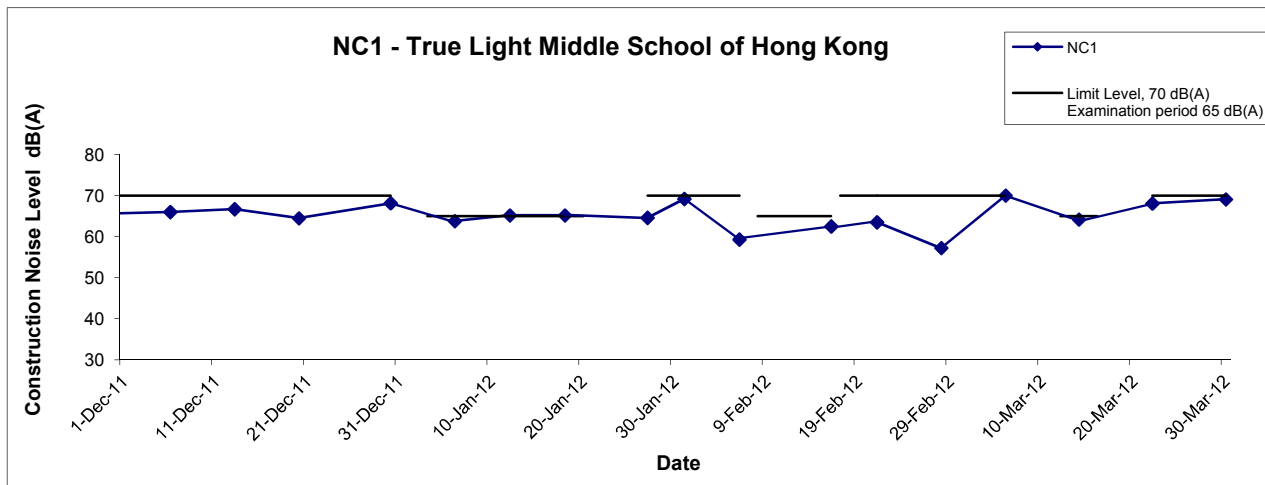
24-hr TSP Concentration Levels



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of 24-hour TSP Monitoring Results	Scale	N.T.S	Project No.	MA8001	CINOTECH
	Date	Mar 12	Appendix	D	

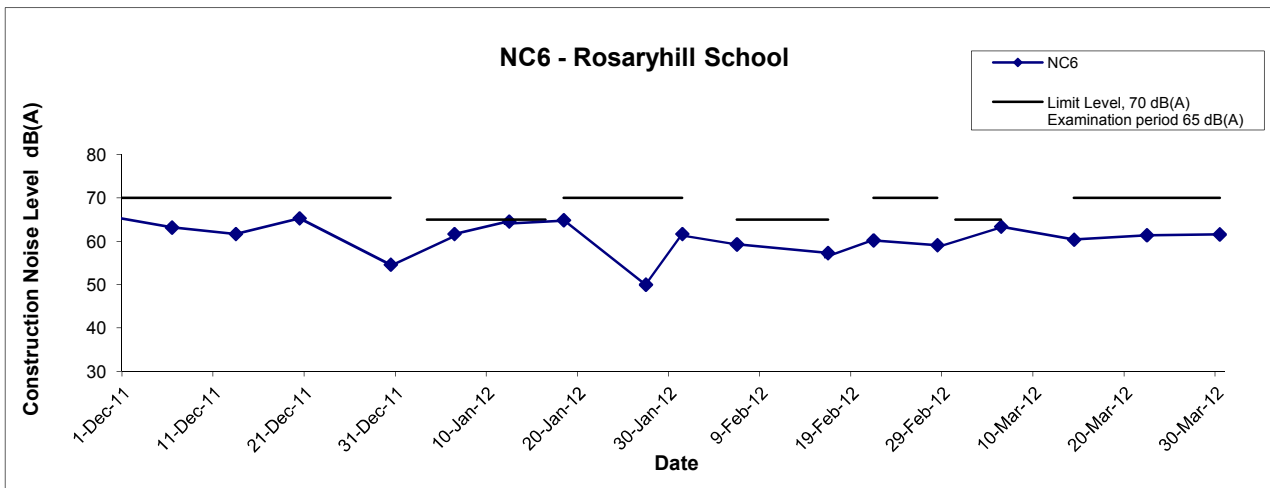
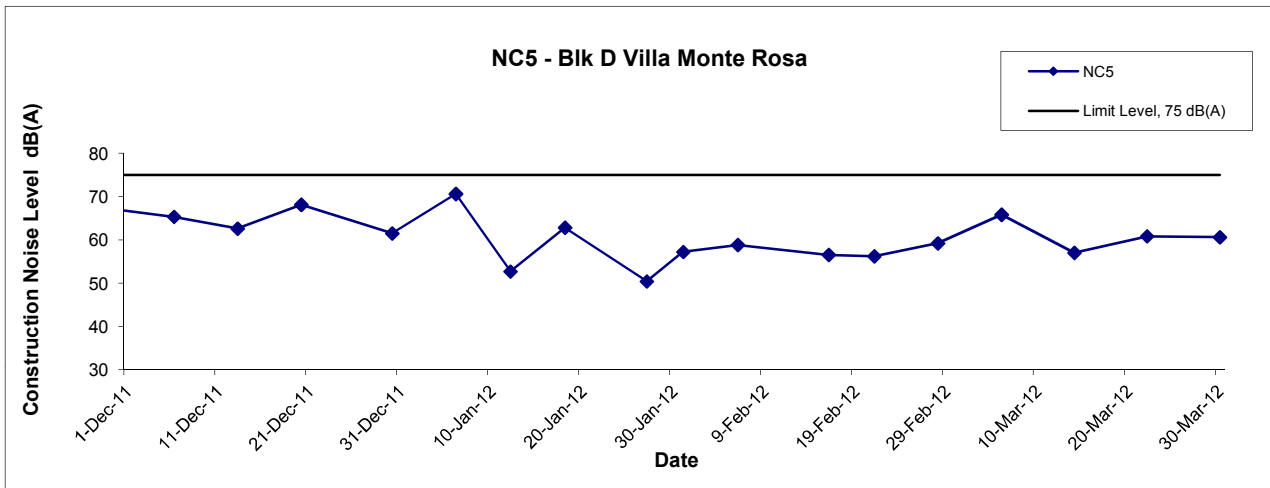
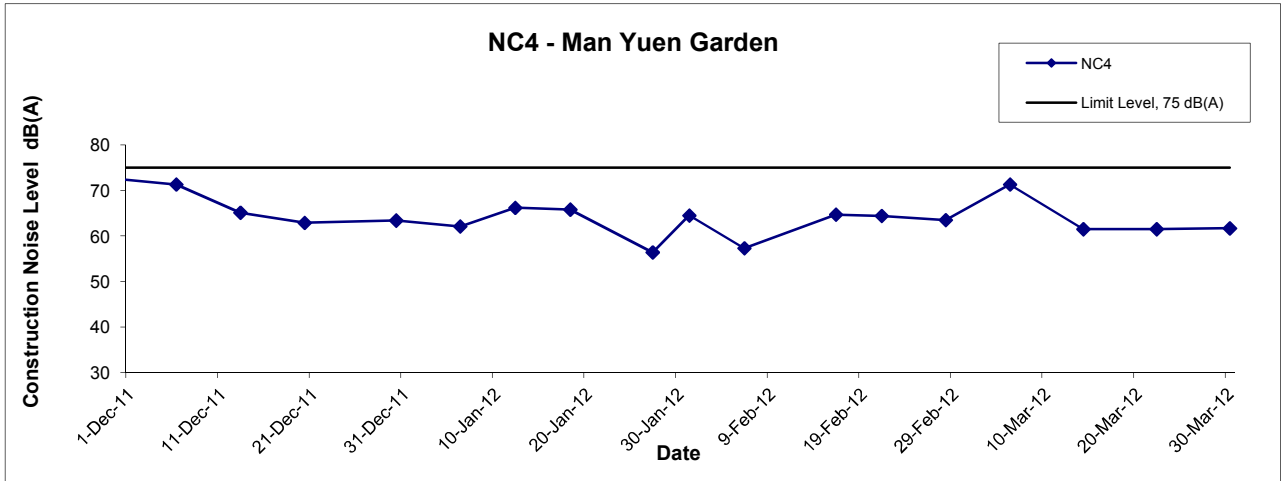
**APPENDIX E
GRAPHICAL PRESENTATION OF
NOISE MONITORING RESULTS**

Noise Levels



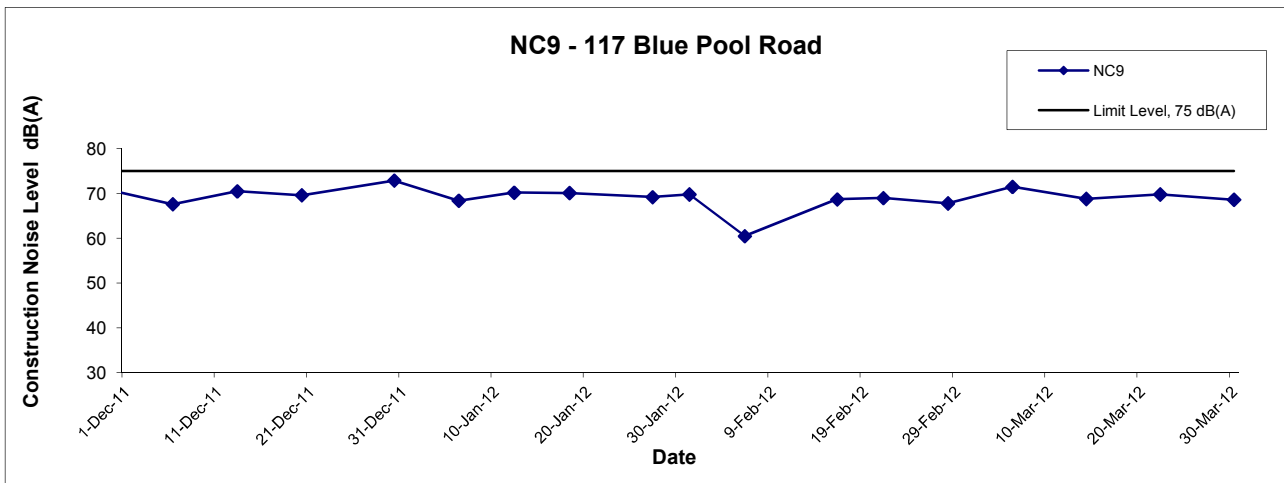
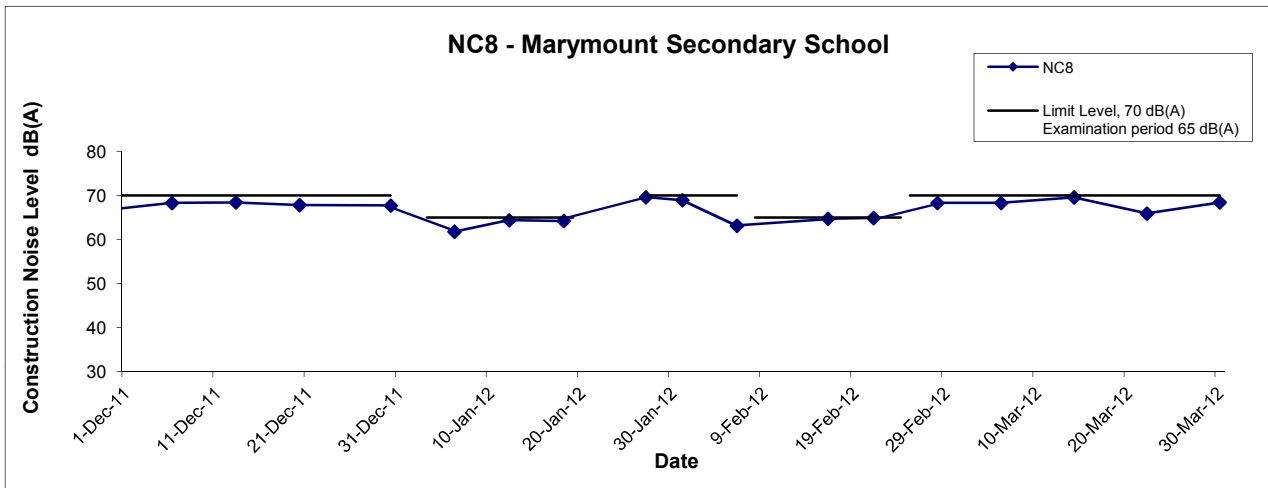
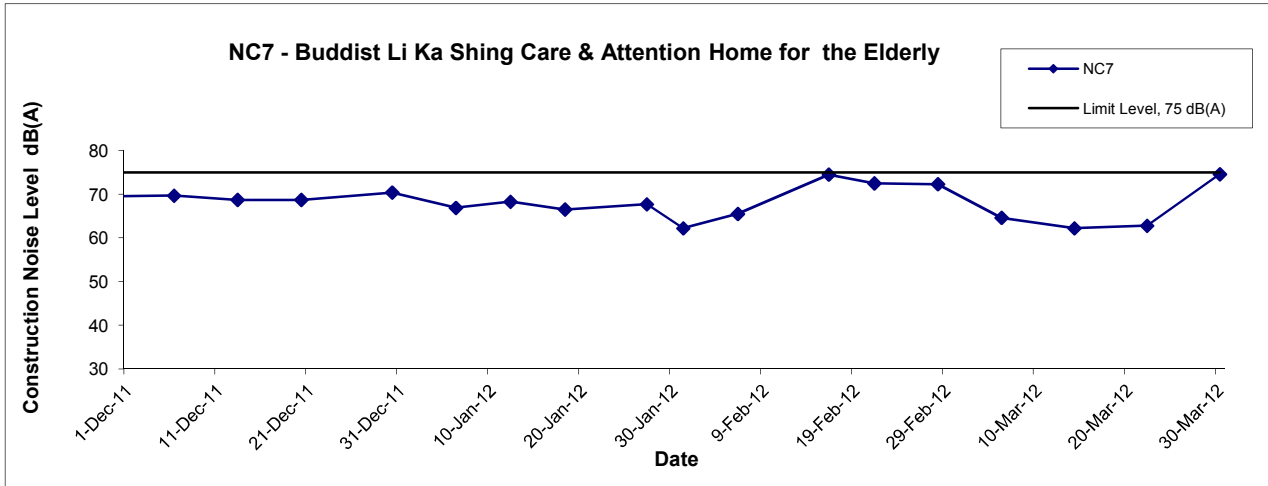
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
	Date Mar 12	Appendix E	

Noise Levels



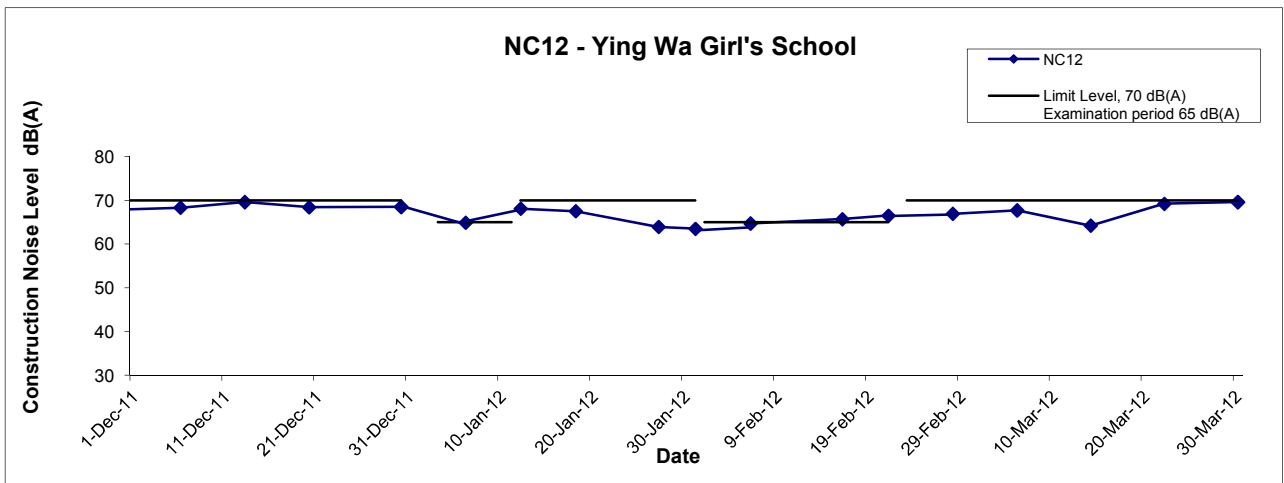
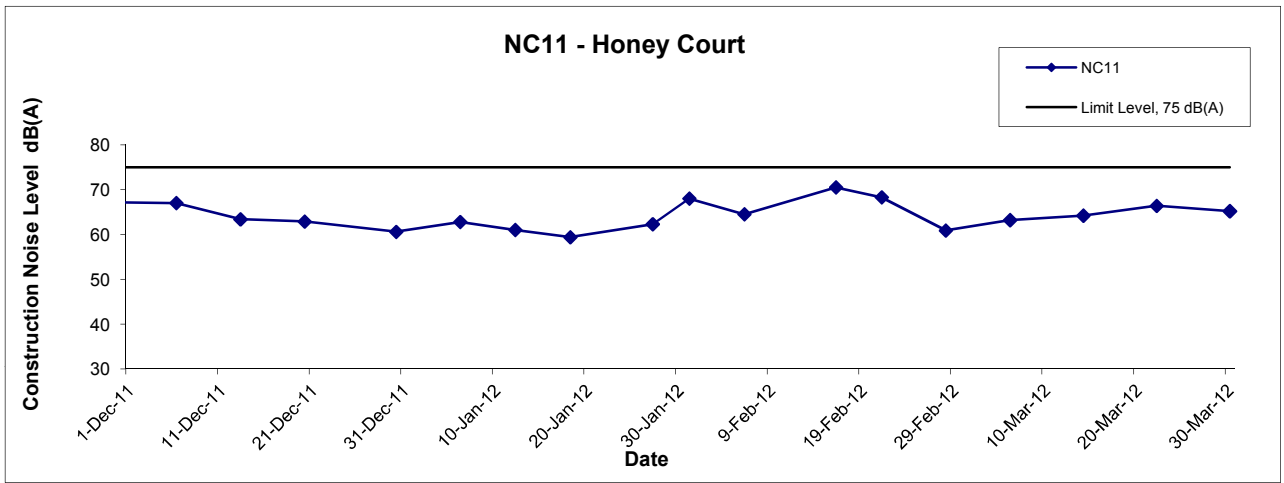
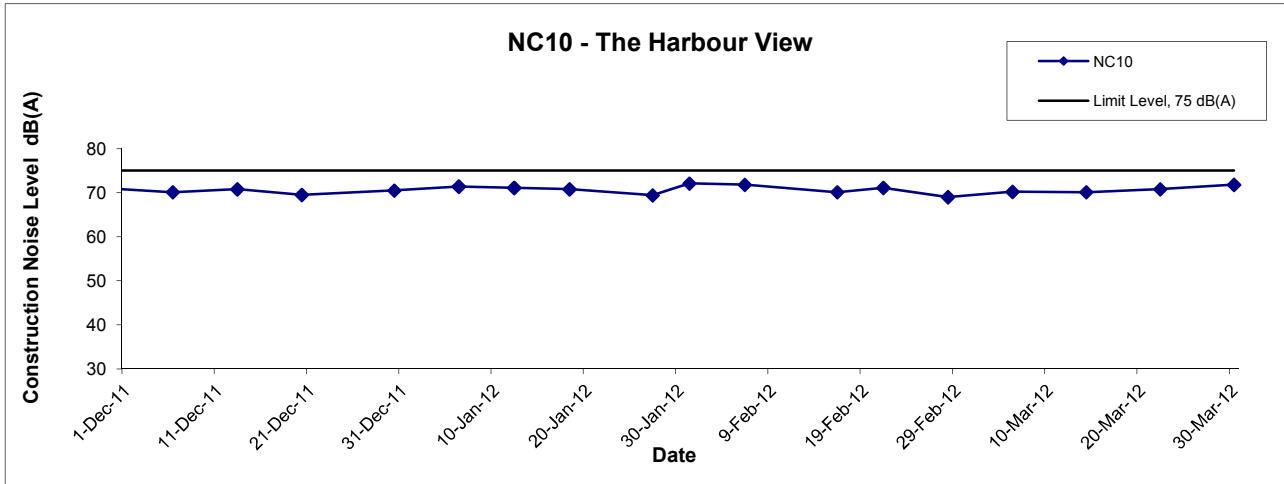
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
	Date Mar 12	Appendix E	

Noise Levels



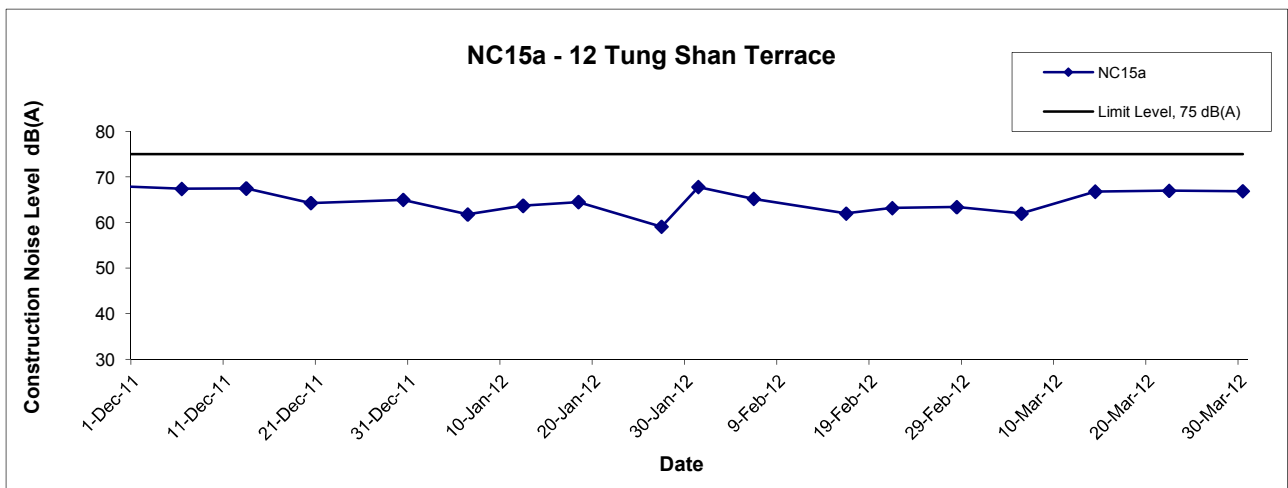
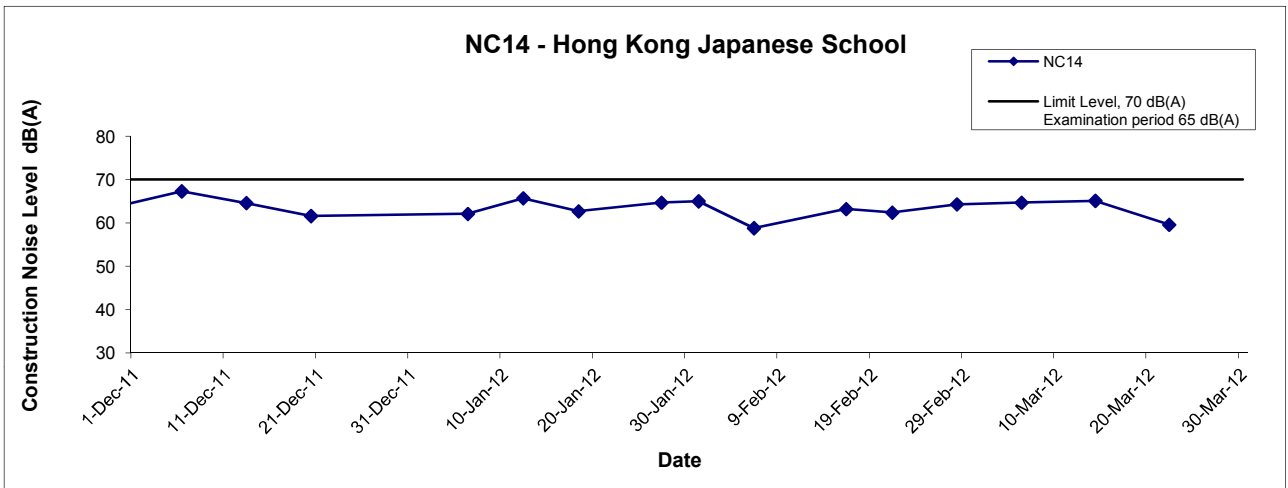
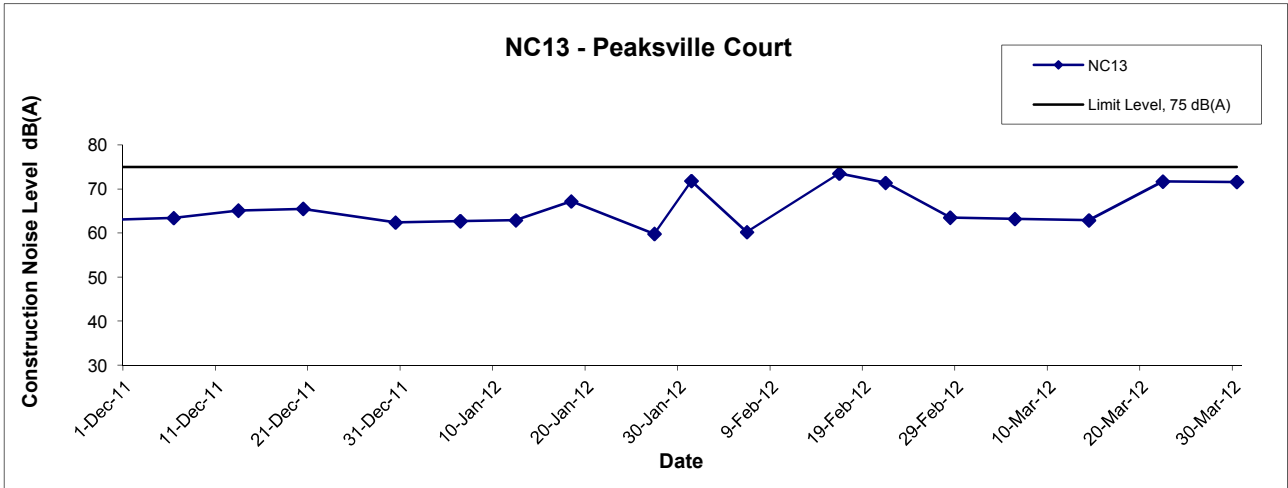
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale	N.T.S	Project No.	MA8001	CINOTECH
	Date	Mar 12	Appendix	E	

Noise Levels



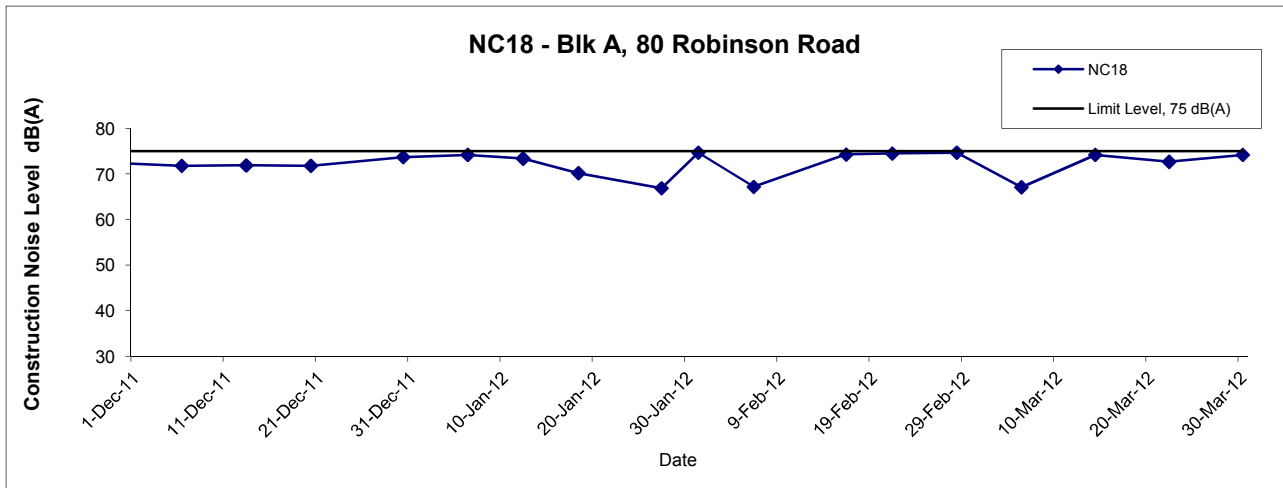
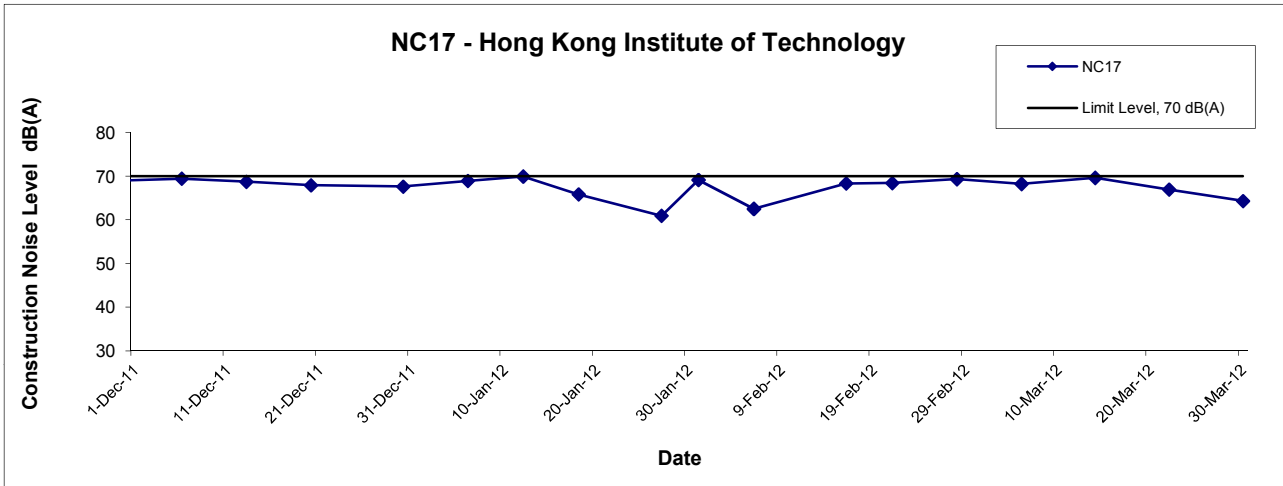
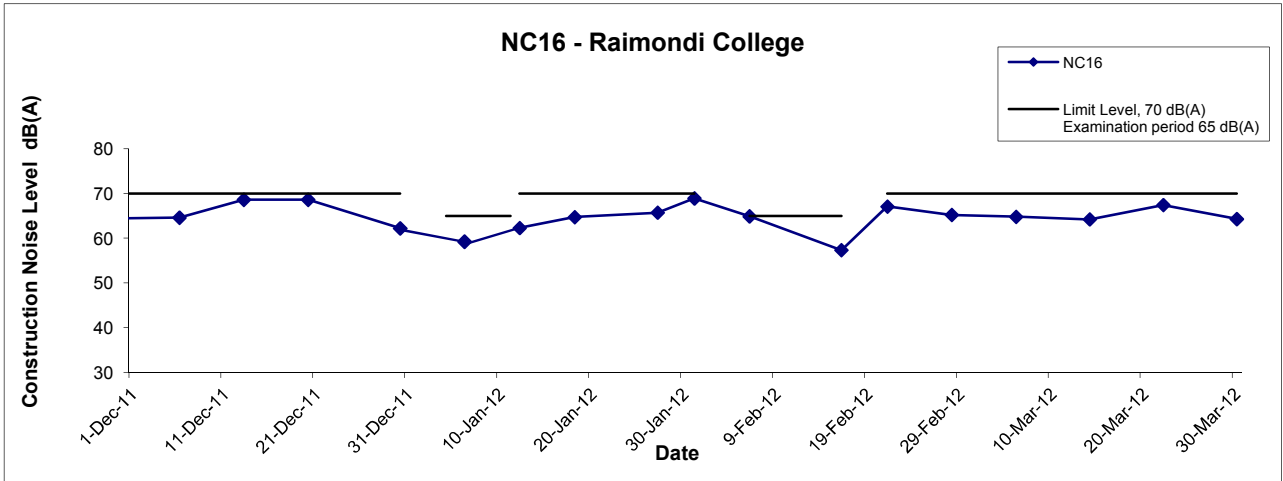
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
	Date Mar 12	Appendix E	

Noise Levels



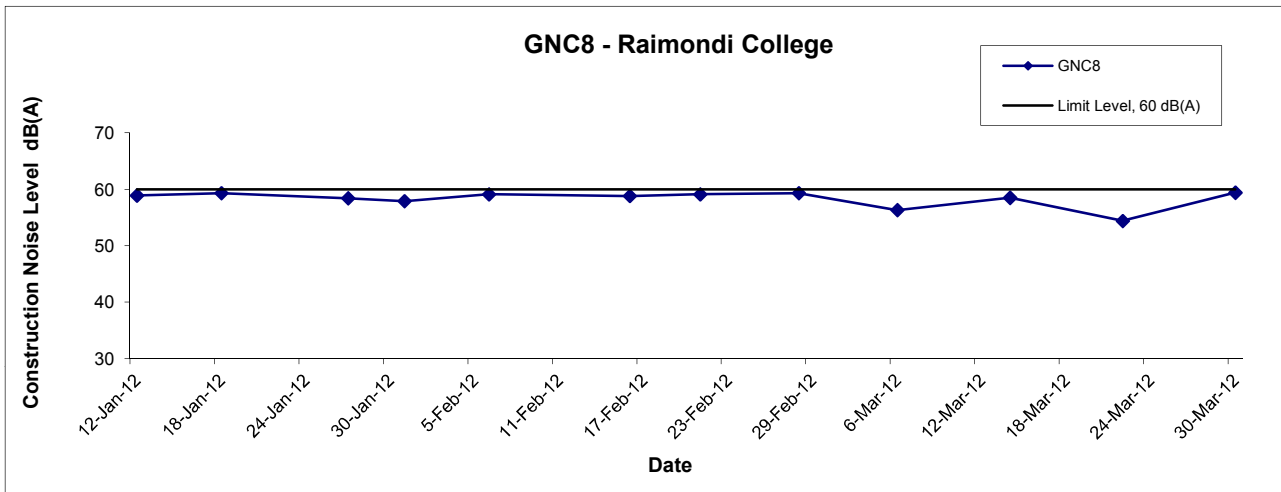
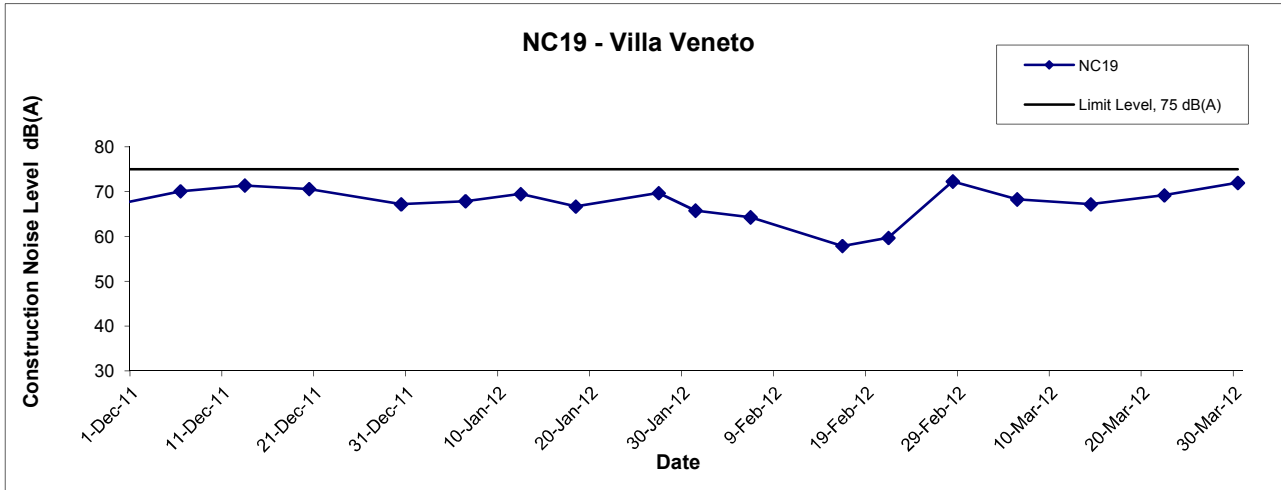
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale	N.T.S	Project No.	MA8001	CINOTECH
	Date	Mar 12	Appendix	E	

Noise Levels



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
	Date Mar 12	Appendix E	

Noise Levels



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
	Date Mar 12	Appendix E	

APPENDIX F
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

Appendix F - Summary of Environmental Mitigation Implementation Schedule

Types of Impacts	Mitigation Measures	Status
Construction Dust	<i>Dust Mitigation Measures</i>	
	<ul style="list-style-type: none"> The Contractor shall undertake at all times to prevent dust nuisance as a result of his activities. Effective dust suppression measures should be installed to minimize air quality impacts, at the boundary of the site and at any sensitive receivers. 	^
	<ul style="list-style-type: none"> No blasting shall be carried out when the strong wind signal or tropical cyclone warning signal No. 3 or higher is hoisted (unless prior permission of the Commissioner of Mines is obtained). 	^
	<ul style="list-style-type: none"> Effective water sprays shall be used during the delivery and handling of all raw sand, aggregate and other similar materials, when dust is likely to be created, to dampen all stored materials during dry and windy weather. Watering of exposed surfaces shall be conducted as often as possible depending on the circumstances. 	^
	<ul style="list-style-type: none"> A watering programme of once every 2 hours in normal weather conditions, and hourly in dry/windy conditions. 	^
	<ul style="list-style-type: none"> Any stockpile of dusty material cannot be immediately transported out of the Site shall be either: a) covered entirely by impervious sheeting; b) placed in an area sheltered on the top and the three sides; or c) sprayed with water or a dust suppression chemical so as to maintain the entire surface wet. 	*
	<ul style="list-style-type: none"> Should a conveyor system be used, the Contractor shall implement the following precautionary measures. Conveyor belts shall be fitted within windboards. Conveyor transfer points and hopper discharge areas shall be enclosed to minimize dust emission. All conveyors under control of the Contractor, and carrying materials which have the potential to create dust, shall be totally enclosed and fitted with belt cleaners. 	^
	<ul style="list-style-type: none"> Any dusty materials being discharged to vehicle from a conveying system at fixed transfer point, three-sided roofed enclosed with a flexible curtain across the entry shall be provided. Exhaust fans shall be provided for this enclosure and vented via a suitable fabric filter system. 	^
	<ul style="list-style-type: none"> The heights from excavated spoils are dropped should be minimise to reduce the fugitive dust arising from unloading/loading. 	^
	<ul style="list-style-type: none"> The Contractor shall confine haulage and delivery vehicles to designated roadways inside the site. If in the opinion of the Engineer, any motorising vehicle is causing dust nuisance, the Engineer may require that the vehicle be restricted to a maximum speed of 15km per hour while within the site area. 	^
	<ul style="list-style-type: none"> Areas within the site where there is a regular movement of vehicles shall have an approved hard surface, be kept clear of loose surface materials and / or be regularly watered. 	^
	<ul style="list-style-type: none"> Wheel cleaning facilities shall be installed for both portals and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads. Water in the wheel cleaning facility shall be changed at frequent intervals and sediments shall be removed regularly. The Contractor shall submit details of proposals for the wheel cleaning facilities to the Engineer prior to construction of the facility. Such wheel cleaning facilities shall be usable prior to any earthwork excavation activity on site. The Contractor shall provide a hard-surfaced road between any cleaning facility and the public road. 	^
	<ul style="list-style-type: none"> Chemical wetting agents shall only be used on completed cuts and fills to reduce wind erosion. 	N/A

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
 N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
 * Recommendation was made during site audit but improved/rectified by the contractor;
 # Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

Types of Impacts	Mitigation Measures	Status
	<ul style="list-style-type: none"> • No vehicle exhausts shall be directed towards the ground or downwards to minimize dust nuisance. • Ventilation system, equipped with proprietary filters, should be provided to ensure the safe working environment inside the tunnel. Particular attention should be paid to the location and direction of the ventilation exhausts. The exhausts should not be allowed to face any sensitive receivers directly. Consideration should also be given to the location of windows, doors and direction of prevailing winds in relation to the nearby sensitive receivers. • In the event of any spoil or debris from construction works being deposited on adjacent land, or stream, or any silt being washed down to any area, then all such spoil, debris or material and silt shall be immediately removed and the affected land and areas restored to their natural state by the Contractor to the satisfaction of the Engineers. <p>In addition, based on the <i>Air Pollution Control (Construction Dust) Regulation</i>, any works involved regulatory and notifiable works, such as stockpiling, loading and unloading of dusty materials, shall take precautions to suppress dust nuisance.</p> <ul style="list-style-type: none"> • The working area of any excavation or earthmoving operation shall spray with water or a dust suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet; • Exposed earth shall be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies; and • Any stockpile of dusty materials (greater than 20m³) shall be either covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides; and sprayed with water or a dust suppression chemical so as to maintain the entire surface wet. • Other suitable dust control measures as stipulated in <i>Air Pollution Control (Construction Dust) Regulation</i>, where appropriate, should be adopted. 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor;
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Types of Impacts	Mitigation Measures	Status
<p>Construction Noise</p>	<p><u>Air borne noise</u></p> <p>In general, potential construction noise impact can be minimized or avoided by imposing a combination of the following mitigation measures:</p> <ul style="list-style-type: none"> • Noisy equipment and activities should be sited by the Contractor as far from close-proximity sensitive receivers as practical. Prolonged operation of noisy equipment close to dwellings should be avoided. • The Contractor should minimise construction noise exposure to the schools (especially during examination periods). The Contractor should liaise with the school and the Examination Authority to ascertain the exact dates and times of all examination periods during the course of the works contract and to avoid noisy activities during these periods. • Noisy plant or processes should be replaced by quieter alternatives. Silenced diesel and gasoline generators and power units, as well as silenced and super-silenced air compressor, can be readily obtained. • Noisy activities should be scheduled to minimise exposure of nearby sensitive receivers to high levels of construction noise. For example, noisy activities can be scheduled for midday, or at times coinciding with periods of high background noise (such as during peak traffic hours). • Idle equipment should be turned off or throttled down. Noisy equipment should be properly maintained and used no more often than is necessary. • The power units of non-electric stationary plant and earth-moving plant should be quietened by vibration isolation and partial or full acoustic enclosures for individual noise-generating components. • Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided, thus reducing the cumulative impacts between operations. The numbers of operating items of powered mechanical equipment should be minimised. Noise can be reduced by increasing the distance between the operating equipment and the NSRs or by reducing the number of items of equipment and/or construction activity in the area at any one time. • The use of quiet plant working methods can further reduce noise level. Quiet plant is defined as Powered Mechanical Equipment (PME) whose actual sound power level is less than the value specified in the TMs for the same piece of equipment. To allow the Contractor some flexibility to select equipment to suit his needs, it is considered too restrictive to specify which specific items of silenced equipment to be used for the construction operations. It should be noted that various types of silenced equipment can be found in Hong Kong and are readily available on the market. BS 5228 also provides examples of quiet construction plant and their SWL. • Construction plant should be properly maintained (well-greased, damage and worn parts promptly replaced) and operated. Construction equipment often has silencing measures built in or added on, e.g. bulldozer silencers, compressor panels, and mufflers. Silencing measures should be properly maintained and utilised. Rubber or damping materials should be introduced between metal panels to avoid rattle and reverberation of noise. • Equipment known to emit sound strongly in one direction should be oriented so that the noise is directed away from nearby NSRs. • Materials stockpile and other structures (such as site offices) should be effectively utilised to shield construction noise. Noise 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

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	<p>can also be reduced by construction of temporary noise barriers which screen the lower floors from viewing the sites. Temporary noise barriers should be installed at active parts of construction areas where construction equipment is being operated in close proximity to NSRs.</p> <ul style="list-style-type: none"> • It is noted that under the WBTC No. 19/2001, all construction sites are required to use metallic site hoarding can be slightly modified (with the addition of steel backings) into temporary noise barriers. These barriers should be gap free and have a surface mass density of at least 7kg/m². • All hand-held percussive breakers and air compressors should comply the Noise Control (Hand-held Percussive Breakers) Regulations respectively under the NCO (Ordinance No. 75/88, NCO Amendment 1992 No.6). <p>The Contractor shall devise, arrange methods of working and carry out the works in such manner as to minimise noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these measures are implemented properly.</p> <p><u>Level 2 Use of Barriers</u></p> <p>Level 2 mitigation measures include providing movable barriers for sites which have sufficient space for installation, full enclosures during the drilling activities at Eastern Portal and at muck pit areas for Eastern portals and cantilever-typed high rise noise barrier for intake W5 (P) and W8.</p> <p>Before construction of the full enclosure at muck pit area, the use of full enclosure noise barrier (Stage A) for the drilling activities at the Eastern Portal area is required. A full enclosure for the muck pit area will then be constructed at this later stage (Stage B). The full enclosure shall be gap free apart from necessary entrance/exits, which shall face towards the entrance of eastern portal to minimize the amount of noise generated from affecting the nearest RNSRs especially school (True Light Middle School of Hong Kong).</p> <p>5m high cantilever-typed hoarding barrier to be built at W5 (P) and W8. These enclosures/barriers should have no gaps and have a superficial surface density of at least 10kg/m². Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period. To schedule the noise barrier erection and dismantling to the non sensitive periods of school to avoid adverse impact to W8/3.</p> <p>Movable barriers of 3 to 5m height with a small cantilevered upper portion and skid footing to be located within about 5 m or more for mobile equipment such that the line of sight is blocked. To provide purposes-built noise barriers or screens constructed of appropriate materials (minimum superficial density of 10kg/m²) located close to the operating PME.</p> <p>Pre-drilling following by chemical splitting instead of using large excavator mounted breaker should be used as mitigation measure for rock breaking and rock drilling.</p>	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

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	<p>No construction activity is recommended during the examination period.</p> <p><u>Ground borne noise</u></p> <p>The noise level should be measured on the ground floor inside the nearest building during the TBM construction work in the daytime. If the daytime monitored ground borne noise exceeds the relevant evening/night ground borne noise criteria, evening/night construction work would not be carried out for the concerned tunnel section. Evening/night time construction work is subject to CNP application under the control of NCO.</p> <p>Public relationship strategy with 24-hour hotline system.</p>	<p>^</p> <p>^</p>

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Water Quality	<u>Precautionary measures for construction work near natural streams</u>	
	<p>The government provides guidelines (ETWB TCW NO. 5/2005 and DSD TC 2/2004) are providing guidelines to minimize impacts when there is construction work carried out at near natural streams course. Relevant mitigation measures for the intakes are summarised as follows:</p>	
	<ul style="list-style-type: none"> • Temporary site access to the work sites should be carefully planned and located to minimize disturbance caused to the substrates of streams/rivers and riparian vegetation by construction plant. 	^
	<ul style="list-style-type: none"> • Locations well away from the rivers/streams for temporary storage of materials (e.g equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil should be identified before commencement of works. 	^
	<ul style="list-style-type: none"> • Proposed works site areas inside, or in the proximity of, natural rivers and streams should be temporarily isolated to prevent adverse impacts on the stream water qualities. 	^
	<ul style="list-style-type: none"> • Stockpiling of construction materials, if necessary, should be completely properly covered and located away from any natural stream/river. • Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby rivers/streams by rain and local runoff. 	^ *
<u>Construction of temporary berthing point at the Western Portal</u>		
<p>A refuse collection vessel shall be provided to collect refuse or materials lost into the sea.</p>	^	
<p>The respective areas of the marine works will be completely enclosed by the silt curtain. The curtain shall be extended from water surface down to the seabed where it is anchored using sinker blocks. The Contractor shall inspect the silt curtain on regular basis to ensure its integrity and it is serviceable for all times.</p>	N/A	

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	<p>Transfer of armour rock onto the seabed from barge at the temporary pier location should be conducted by careful grabbing and unloading to the seabed (to minimize sediment migration).</p>	^
	<p>The conveyor belt should be completely covered and muddy effluent from the temporary barge should be contained, treated and disposed. Where there is transfer of excavated wastes, the Contractor should provide appropriate measures to ensure that the waste is free from floatables, putrescibles, organic wastes and toxic materials and when required a refuse collection vessel be provided to collect float refuse.</p>	^
	<p><u>Construction of stilling basin at Western Portal outfall</u></p>	
	<p>All construction for the basin should be carried out inside the temporary cofferdam which is a temporary watertight enclosure built in the water and pumped dry to expose the bottom so that construction of stilling basin can be undertaken.</p>	^
	<p>During the dewatering process, appropriate desilting/sedimentation devices should be provided on site for treatment before discharge. The Contractor should ensure discharge water from the sedimentation tank meet the WPCO/TM requirements before discharge.</p>	^
	<p>The cofferdam will remain on site until after the construction of stilling basin has been completed. The coffer dam shall be regularly inspected and maintained to ensure no spillage of waste or wastewater into the sea. Conveyance of dredged materials from the coffer dam shall be carried out cautiously to avoid spillage into the sea.</p>	^
	<p>The filled material for the stilling basin should be contained inside the temporary cofferdam. The top level of the cofferdam shall be constructed higher than the final backfilled level.</p>	^
	<p>The Contractor shall be responsible for the design, installation and maintenance of the silt curtains to minimize the impacts on the water quality and the protection of water quality. The design and specification of the silt curtains shall be submitted by the Contractor to the Engineer for approval.</p>	N/A
	<p>Silt curtains shall be formed from tough, abrasion resistant, permeable membranes, suitable for the purpose, supported on floating booms in such a way as to ensure that the sediment plume shall be restricted to within the limit of the works area. The silt curtain shall be formed and installed in such a way that tidal rise and fall are accommodated, with the silt curtains always extending from the surface to the bottom of the water column and held with anchor blocks. The removal and reinstallation of such curtains during typhoon conditions shall be as agreed with the Director of Marine Department. The contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic. Any damage to the silt curtain shall be repaired by the Contractor promptly and the works shall be stopped until the repair is fixed to the satisfaction of the Engineer.</p>	N/A

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	<p>Transfer of rock fill material (armor rock) from the barge onto the site location should be conducted by grabbing and placement on the seabed to minimize sediment migration. No free dropping of the material will be allowed.</p> <p>Prior to the construction of armor rock based panel, a silt curtain shall also be installed prior to carry out any marine works as a preventive mitigation measure.</p> <p><u>Construction of TBM tunnel at both portals and intakes</u></p> <p>Recycled water will be used at the cutter face for cooling purposes. Used water will be collected and discharged to a settling tank for settlement. Excess water from the settling tank will be transferred to the water treatment plant on site where the addition of flocculants will assist in settlement of solids. The Contractor should ensure discharge water from the sedimentation tank meet the WPCO/TM requirements before discharge.</p> <p>During the drilling process, all flushing water will be recycled for use. Discharge of the treated water to nearby drainage system shall be allowed provided that it has been treated to a level meeting with statutory requirements.</p> <p>Water flow at streams should be maintained by a temporary diversion system during the construction phase of intakes and manhole drop shafts.</p> <p><u>General Construction Activities and Workforce</u></p> <p>A. Surface runoff</p> <p>Effluent produced from construction activities are subjected to WPCO control. Effluent produced from sites should be diverted away from stream courses. Construction works near stream course should be scheduled in the dry season as far as practical to avoid excessive site runoff discharge.</p> <p>Under the <i>Water Pollution Control Ordinance</i> (WPCO), turbid water from construction sites must be treated to minimize the solids content before being discharged into storm drains. The suspended solids load can be reduced by directing the runoff into temporary sand traps or other silt-removal facilities, and other good and appropriate site management practices. Advice on the handling and disposal of construction site discharge is provided in the ProPECC Paper (PN 1/94) on Construction Site Drainage.</p> <p>A drainage system layout should be prepared by the Contractor for each of the works areas (portals and intakes), detailing the facilities and measures to manage pollution arising from surface runoff from those works areas. The drainage layout and an associated drainage management plan to reduce surface runoff sediments and pollutants entering watercourses, should be submitted to the Engineer for approval and to EPD for agreement.</p>	<p>^</p> <p>N/A</p> <p>^</p> <p>^</p> <p>^</p> <p>*</p> <p>*</p> <p>*</p>

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	<p>The system should be capable of handling stormwater from the site and directing it to sediment removal facilities before discharge. If oil and grease is used on the site or brought to the site, the stormwater should pass through oil interceptors before discharge. The interceptors should have a bypass to prevent washout in heavy storms.</p> <p>A temporary channel system or earth bunds or sand barriers should be provided in works areas on site to direct stormwater to silt-removal facilities. Stockpiled materials, if susceptible to erosion of rain or wind, should be covered with tarpaulins (or/similar fabric) or hydroseedings as far as practicable especially during the wet season.</p> <p>Silt removal facilities should be checked and the deposited silt and grit should be removed regularly to ensure these facilities are in good working condition and to prevent blockages.</p> <p>Vehicle washing areas should be drained into a settlement basin to settle out the suspended solid before discharge to storm water drains. The water should be recycled on site whenever possible. It is suggested that the wash water from the wheel wash basin is either reused for road watering or pumped to the on-site settling tanks for treatment. Water used for dust depression purposes should be minimized and an alternative soil holding agent should be considered.</p> <p>B. Spillage, Oil and Solvents Any contractor generating waste oil or other chemicals as a result of his activities should register as a chemical waste producer and provide a safe storage area for chemicals on site. Oil interceptors need to be regularly inspected and cleaned to avoid wash-out of oil during storm conditions. A bypass should be provided to avoid overload of the interceptor's capacity.</p> <p>Any spillage should be cleaned up immediately and the resulting contaminated absorbent material should be properly managed according to Waste Disposal Regulations. Spills should be contained to avoid spreading and contaminating the water resources.</p> <p>Oil and fuels should be used and stored properly in designated area. All fuel tanks and storage areas should be provided with locks and be sited on within sealed areas within surrounded by bunds of with a capacity equal to 110% of the storage capacity of the largest tank.</p> <p>Good housekeeping practices are required to minimize careless spillage and keep the work space in a tidy and clean condition. Appropriate training, including safety codes and relevant manuals, should be given to the personnel who regularly handle the chemicals on site.</p>	<p>^</p> <p>*</p> <p>*</p> <p>^</p> <p>^</p> <p>*</p> <p>*</p>

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	<p>C. On-Site Effluent Generation</p> <p>Sewage arising from the additional population of workers on site should be collected in a suitable storage facility (chemical mobile toilets). Most of the work site locations are close to the public sewerage system, and therefore the use of septic tanks isare, therefore, not encouraged. Portable toilets should be used coupled with tickering away services provided by a licensed collector. They should be positioned at appropriate locations across the site to ensure no direct discharge of foul water off-site.</p> <p>D. Protection of Existing Flora and Fauna</p> <p>The Contractor should provide details of the plant and operation plans at each site for approval by the Engineer before commencing construction. The plans should include how the existing flora and fauna will be protected. Locations required for groundwater levels monitoring are Eastern Portal, PFLR1(P), THR2(P), TP5, TP789 and W12.</p> <p>The construction and demolition of the temporary pier may create short term impacts on the local marine water quality. The situation will be restored once the work is finished by proper phasing of the works programme and implementation of the adequate mitigation measures (e.g. silt curtain) the impacts will be minimized.</p> <p><u>Maintaining Baseflow in Downstream Watercourses</u></p> <p>The final design will be developed during the detailed design stage. The exact base flow rates to be maintained at each of the intakes will be subject to detailed site investigation at design stage.</p> <ul style="list-style-type: none"> • Purpose of the by-pass device is to maintain the base-flow of the affected stream course. • The by-pass system comprises an approach link and a trapezoidal channel. • The approach link is section with inclined profiled surface at a gradient of 1 in 100. It is used to direct the base flow to the bypass trapezoidal channel at its down stream end during the normal days. • The trapezoidal channel is sized such that it could handle the base flow in the affected stream course which is estimated to be no more than 20 l/s. • Whenever the flow in the stream course exceeding the base flow rate, the excessive flow will overflow into the intake structure via the bottom rack structure. The bottom rack structure has bar screen on the top and inclined channel at the bottom. The top level of the bar screen is level with the by-pass channel with an aim to receive the overflow from the by-pass channel. • The by-pass channel is designed requiring minimum maintenance. However, it is recommended that the maintenance authority carry out regular maintenance inspection prior to onset of seasons and after significant rainstorm event to prevent blockage of the by-pass and bottom rack structure. 	<p>^</p> <p>^</p> <p>^</p> <p></p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>

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Waste/Chemical	<p><u>General</u></p> <p>A proper waste management plan should be implemented to promote waste minimisation at source. Where waste generation is unavoidable then the potential for recycling or reuse should be explored and opportunities taken. If wastes cannot be recycled then the recommended disposal routes should be followed.</p>	*
	<p>All waste materials shall be segregated into categories covering:</p> <ul style="list-style-type: none"> • Excavated material or construction waste suitable for reuse on-site • Excavated material or construction waste suitable for public filling areas • Remaining C&D waste for landfill • Chemical waste, and • General refuse 	<p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
	<p>Proper segregation and disposal of construction waste should be implemented. Separate containers for inert and non-inert wastes should be provided. The inert waste should be taken to public filling area and the non-inert waste should be transported to strategic landfills.</p>	^
	<p>A trip-ticket system on the solid waste transfer/disposal operations should be included as one of the contractual requirements (ETWB TCW No. 31/2004). The Independent Environmental Checker (IEC) should be responsible for auditing this system.</p>	^
	<p>IEC should also be responsible for auditing the well-documented record system which includes: (i) quantity of waste generation, (ii) quantity of recycled material, (iii) quantity of disposed material, (iv) disposal methods and (v) sites should be implemented during construction phase.</p>	^
	<p>Regular cleaning and maintenance of the waste storage area should be conducted throughout the construction stage.</p>	^
	<p><u>Excavated spoil</u></p> <p>Control measures for soil temporarily stockpiled on-site should be taken in order to minimize the noise, generation of dust, pollution of water and visual impact. Key impacts include:</p>	^

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Terrestrial Ecology	<p>During the detailed design stage, the following issues should also be considered as possible to further minimise the impacts:</p> <ul style="list-style-type: none"> • Adjustment of site boundary to minimise temporary loss of natural stream habitat during construction. • Adjustment of site boundary to minimise use of mixed woodland as temporary works area. In particular, the woodland habitat in temporary works area of the Eastern Portal will be avoided, thereby greatly reducing the area of temporary loss of woodland habitat. • Minimizing felling of large trees. • About 20% of trees within the works area will be transplanted. The individual of <i>Artocarpus hypargyreus</i> recorded within the temporary works area of HKU1, if to be encroached, would also be transplanted. 	<p>^</p> <p>^</p> <p>^</p> <p>^</p>
	<p>Standard site practices including the following, should be enforced to minimise the disturbance to the surroundings:</p> <ul style="list-style-type: none"> • Treat any damage that may occur to large individual trees in the adjacent area using materials and methods appropriate for tree surgery. • Reinstate work sites/disturbed areas immediately after completion of the construction works, in particular, through on-site tree/shrub planting along the woodland and shrubland section within the temporary works area. Tree/shrub species used should make reference from those in the surrounding area. • Regularly check the work site boundaries to ensure that they are not exceeded and that no damage occurs to surrounding areas. 	<p>^</p> <p>^</p> <p>^</p>
	<p>A total of 1.02 ha would be replanted with woodland species, reaching almost a 1.5:1 ratio for compensatory planting. Tree/shrub species used should be based on those in the surrounding areas, including those which are commonly recorded during the baseline surveys.</p>	<p>^</p>
	<p>A low-flow channel would be provided within the channelised section to maintain a deeper water depth in the expanded channel, in particular during dry season as well as a basin at the end of the channelised section to provide living space for aquatic life. Step chute in the form of a series of descending water pools would be constructed between the low flow channel and the undisturbed stream course. There would also be openings for aquatic fauna between each chute step (pool). These could work like a “ladder” to help avoid isolating the aquatic fauna in the channelised section from natural habitats.</p>	<p>^</p>
	<p>Measures are also needed to maintain the flow of all affected streams/nullahs during the construction stages. Temporary bypass should be provided if the stream/nullah flows will be cut off by the construction works. After the construction works are finished, sections of temporary loss should be reinstated. Construction materials, wastes, and equipment should be cleared from the sites.</p>	<p>^</p>

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	<p>Surveys of amphibians at E4(P), PFLR1(P), W12(P), MB16, E5(B)(P), TP789(P) and P5(P) prior to commencement of construction is recommended. Frogs, including Hong Kong Cascade Frog and Lesser Spiny Frog, and tadpoles found at work areas of these proposed intake points will be collected and translocated to nearby streams that will not be affected by the project. These procedures should be performed by experienced herpetologists. A detailed translocation proposal will be submitted during the detailed design stage.</p> <p>Measures should also be taken to avoid runoff to streams and marine habitats. Stream/channel which could potentially be affected during construction should be prevented from sedimentation by erection of sediment barriers. Site runoff should be desilted by siltation traps in streams/channels or diverted, to reduce the potential for suspended sediments, organics and other contaminants to enter the local stream environment.</p>	<p>^</p> <p>^</p>
Marine Ecology	<p>Silt curtains will be deployed during the construction and demolition of the temporary berthing point. Deployment of silt curtains around the berthing point area would effectively avoid adverse water quality impacts due to barge filling. No significant ecological impact is anticipated.</p> <p>The invert of the stilling basin would be at -5.4 mPD. A cofferdam in the form of pipe-pile wall is to be constructed outside the stilling basin prior to the construction of basin. The cofferdam will be dewatered to provide a working area for construction of the stilling basin. The boulders from the seawall will then be removed by landbased grabs.</p> <p>Although the speed of the working vessels to be used in the Project (mainly barges) would not be high, a speed limit for marine traffic is proposed as a precautionary measure. A speed limit of 10 knots should be strictly enforced in the works area, in particular in the waters between the outfall location and the navigation channel in East Lamma Channel.</p>	<p>N/A</p> <p>^</p> <p>^</p>

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Landscape and Visual	The proposed landscape and visual mitigation measures during the construction phase include:	
	CM1 - Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	^
	CM2 - Existing trees to be retained on site should be carefully protected during construction. The detailed proposal for any trees felling and transplantation is subject to Lands Department's approval on tree felling application at the detailed design stage.	^
	CM3 - Trees unavoidably affected by the works should be transplanted where practical.	^
	CM4 - Compensatory tree planting should be provided to compensate for felled trees.	^
	CM5 - The extent of disturbance on the existing stream course should be minimized. Any temporary works areas within the stream course shall be reinstated after construction.	^
	CM7 – Control of night-time lighting	^
	CM8 – Erection of decorative screen hoarding	^

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Cultural Heritage	<p>The Cultural Heritage Impact Assessment has identified the following resources which will require mitigation measures during the construction stage;</p>	
	<p><u>Haw Par Mansion (including boundary wall and gate)</u> A condition survey must be undertaken by a qualified professional prior to the commencement of construction works for the tunnel portal in order to assess the structural integrity of the mansion, wall and gate (with special attention paid to any fragile architectural features). A report containing description of the types of construction, identification of fragile elements, an appraisal of the condition and a photographic record must be prepared. The report must also provide an assessment indicating whether further precautionary measures will be necessary during the construction phase, and if so provide details for sufficient protective measures, including monitoring for vibration control to ensure that no damage to the structure and fabric of the house, wall and gate results from the construction works. The report must be submitted to AMO for approval before construction activities commence. Upon approval the appropriate monitoring and precautionary measures shall be put into place.</p>	<p>^</p>
	<p>A buffer zone with a minimum width of 3 metres and an obstruction free access point must be maintained between the boundary wall/gate and the temporary works area (during construction works associated for both the tunnel portal and the permanent vehicle access ramp). This is to enable access for routine maintenance works on the wall and to ensure that the wall is not damaged by machinery operation or related construction activities. The temporary works area will be enclosed by standard DSD site hoarding.</p>	<p>^</p>
	<p><u>Former Explosive Magazine of Victoria Barracks</u> A condition survey must be undertaken by a qualified professional prior to the commencement of construction works in order to assess the structural integrity of the retaining wall and the extent of damage from cracks and vegetation growth. A report containing a description of the wall's construction materials, identification of fragile and/or endangered elements, an appraisal of the condition and a photographic record of the retaining wall must be prepared. The report must also provide an assessment indicating whether further precautionary measures will be necessary during the construction phase, and if so provide details for sufficient protective measures, such as monitoring for vibration control, to ensure that no damage to the retaining wall results from the construction works. The report must be submitted to AMO for approval before construction activities commence. Upon approval the appropriate monitoring and precautionary measures shall be put into place.</p> <p>A buffer zone with a minimum width of 3 metres and an obstruction free access point must be maintained between the retaining wall and the temporary works area (for the duration of the construction phase). The works area will be enclosed by standard DSD site hoarding.</p>	<p>^</p>

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor;
Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

Types of Impacts	Mitigation Measures	Status
Fisheries	<p>Silt curtain will be deployed during the construction and demolition of the temporary berthing point. With the deployment of silt curtains around the berthing point area, adverse water quality impact associated with the filling would not be anticipated. No significant fisheries impact is anticipated.</p> <p>The invert of stilling basin will be found at -5.4 mPD. A cofferdam in the form of pipe-pipe wall is to be constructed outside the stilling basin prior to the construction of basin. The cofferdam will be dewatered to provide a working space for the construction of stilling basin. The boulders from the seawall will then be removed by landbased grabs.</p>	<p>N/A</p> <p>^</p>
Hazard to Life	<p>There will be no overnight storage of explosives for this project. Transportation of explosives to site for the construction of adit will be undertaken on a daily basis. The contractor is required to destroy any unused explosives before nightfall. If contractor wishes to set up magazines for overnight storage of explosives, it is necessary to carry out risk assessment and seek the relevant approval following the EIAO process.</p>	<p>^</p>

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
 N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
 * Recommendation was made during site audit but improved/rectified by the contractor;
 # Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

**APPENDIX G
SITE AUDIT SUMMARY**

Appendix G Summary of Observation and Recommendation Made during Site Inspection

Summary of Observation and Recommendation Made during Site Inspection in January 2012

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	19/01/2012	Water in the sedimentation tank was observed silty in intake W8. The contractor was reminded to clear the tank regularly.	Rectification/improvement was observed during the follow-up audit session.
Reminders	05/01/2012	To clear the leaves and debris in the drainage channel in intake PFLR1.	Rectification/improvement was observed during the audit session on 19 Jan 2012.
	05/01/2012	To provide labels for chemical or oil containers at MA17.	Rectification/improvement was observed during the audit session on 26 Jan 2012.
	05/01/2012	To provide labels and drip tray for chemical or oil containers at BR4.	Rectification/improvement was observed during the audit session on 19 Jan 2012.
	12/01/2012	To clear the construction waste on the slope at intake HKU1.	Rectification/improvement was observed during the audit session on 19 Jan 2012.
	12/01/2012	To clear the mud in the drainage channel at intake P5.	Rectification/improvement was observed during the follow-up audit session.
	12/01/2012	To provide drip tray for oil and chemical containers at intake MBD2.	Rectification/improvement was observed during the follow-up audit session.
	19/01/2012	To provide valid noise labels for the air compressors at intake GL1 and P5.	Rectification/improvement was observed during the audit session on 23 Feb 2012.
	19/01/2012	To clear the stagnant water in the drainage channel at intake W0.	Rectification/improvement was observed during the follow-up audit session.
	19/01/2012	To clear the construction material in the drainage channel at intake MB16.	Rectification/improvement was observed during the follow-up audit session.
	31/01/2012	To remove the stagnant water at intake BR6.	Rectification/improvement was observed during the follow
	31/01/2012	To remove the stagnant water in the H-piles at intake SMH17.	Rectification/improvement was observed during the follow

Summary of Observation and Recommendation Made during Site Inspection in February 2012

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	29/02/2012	Desilting facilities should be provided to the discharge water at intake P5.	Rectification/improvement was observed during the follow-up audit session.
Reminders	09/02/2012	To provide drip tray and labels for oil drums at intake MA17.	Rectification/improvement was observed during the follow-up audit session.
	09/02/2012	To clear the drainage channel at intake M3.	Follow-up action is needed to be reviewed in next reporting quarter.
	09/02/2012	To clear the drainage channel at Western Portal.	Rectification/improvement was observed during the follow-up audit session.
	16/02/2012	To provide dust mitigation measures during the rock breaking works at Eastern Portal.	Rectification/improvement was observed during the follow-up audit session.
	16/02/2012	Clear the rubbish at the area of seawall at Western Portal.	Rectification/improvement was observed during the audit session on 29 Feb 2012.
	16/02/2012	Clear the chemical oil at the area near site at Western Portal.	Rectification/improvement was observed during the audit session on 29 Feb 2012.
	16/02/2012	Properly clear the used cement bags at Intake TP789.	Rectification/improvement was observed during the follow-up audit session.
	23/02/2012	To clear the stagnant water at W10.	Rectification/improvement was observed during the audit session on 15 Mar 2012.
	23/02/2012	Properly dispose the chemical oil on the ground at W10.	Rectification/improvement was observed during the follow-up audit session.
	23/02/2012	Properly dispose the general refuse a Western Portal at the seawall and near the rubbish bin.	Rectification/improvement was observed during the follow-up audit session.
	29/02/2012	To clear the stagnant water at W10.	Rectification/improvement was observed during the audit session on 15 Mar 2012.
	29/02/2012	To clear the mud in the sedimentation tank at intake RR1.	Rectification/improvement was observed during the follow-up audit session.

Summary of Observation and Recommendation Made during Site Inspection in March 2012

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	08/03/2012	Desilting facilities should be provided to the discharge water before entering the public channel at W0.	Rectification/improvement was observed during the follow-up audit session.
	22/03/2012	To clear the drainage channel near the seawall at Western Portal and avoid blockage.	Follow-up action is needed to be reviewed in next reporting quarter.
	29/03/2012	The drainage channel at BR5 is observed blocked with litter and grease.	Follow-up action is needed to be reviewed in next reporting quarter.
Reminders	08/03/2012	To clear the litter in the drainage channel at intake PFLR1.	Rectification/improvement was observed during the follow-up audit session.
	08/03/2012	To clear the stagnant water at W10.	Rectification/improvement was observed during the follow-up audit session.
	08/03/2012	To clear the stagnant water in the drip tray at MBD2.	Rectification/improvement was observed during the follow-up audit session.
	08/03/2012	To clear the stagnant water and refuse at HR1.	Rectification/improvement was observed during the follow-up audit session.
	15/03/2012	Clear the broken sand bags at near the gullies at Intake M3.	Follow-up action is needed to be reviewed in next reporting quarter.
	15/03/2012	Clear the empty chemical containers as chemical wastes at Intake M3.	Follow-up action is needed to be reviewed in next reporting quarter.
	15/03/2012	Clear the discarded leaves at the drainage channel at Intake TP4.	Follow-up action is needed to be reviewed in next reporting quarter.
	15/03/2012	To cover the dusty stockpile properly at Intake GL1.	Rectification/improvement was observed during the follow-up audit session.
	15/03/2012	Provide drip tray for oil drums and prevent oil leakage.	Follow-up action is needed to be reviewed in next reporting quarter.
	22/03/2012	To clear properly the stagnant water at Eastern Portal.	Follow-up action is needed to be reviewed in next reporting quarter.
	22/03/2012	To provide drip tray for the oil drum at Eastern Portal.	Follow-up action is needed to be reviewed in next reporting quarter.
	22/03/2012	To clear the mud and stagnant water in the sedimentation tank at DG1.	Follow-up action is needed to be reviewed in next reporting quarter.
	29/03/2012	Properly clear the stagnant water in the sedimentation tank at intake W1.	Follow-up action is needed to be reviewed in next reporting quarter.

**APPENDIX H
SUMMARY STATUS OF
ENVIRONMENTAL LICENCES AND
PERMITS**

Appendix H - Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
FEP-01/272/2007/B	25/6/09	N/A	Construction of a 6.25m-7.25m in diameter and about 11 km long underground main drainage tunnel, 2 portals and a series of connecting adits and drop shafts.	Valid
Effluent Discharge License				
EP860/W10/XY0175	23/06/08	30/06/13	Industrial discharge (Area of Mount Butler Office)	Valid
EP860/W10/XY0177	23/06/08	30/06/13	Industrial discharge (Eastern Portal Site)	Valid
EP820/W9/XT086	22/07/08	31/07/13	Industrial discharge (Western Portal Site)	Valid
WT00005864-2010	20/01/10	31/01/15	Industrial discharge (Western Portal Site)	Valid
EP860/W10/XY0183	19/11/08	30/11/13	Industrial discharge (Intake W0, Stubbs Road, Wan Chai, HK)	Valid
WT00003372-2009	-	30/4/14	Industrial discharge (Intake SM1)	Valid
WT00003737-2009	-	31/5/14	Industrial discharge (Intake MB16)	Valid
WT00004126-2009	-	31/5/14	Industrial discharge (Intake HKU1)	Valid
WT00003738-2009	-	31/5/14	Industrial discharge (Intake THR2)	Valid
WT00004270-2009	-	31/7/14	Industrial discharge (Intake PFLR1)	Valid
WT00004806-2009	-	30/09/14	Industrial discharge (Intake E7)	Valid
WT00004808-2009	-	30/09/14	Industrial discharge (Intake MBD2)	Valid
WT00004885-2009	-	30/09/14	Industrial discharge (Intake RR1)	Valid
WT00005135-2009	-	31/10/14	Industrial discharge (Intake W10)	Valid
WT00005374-2009	-	30/11/14	Industrial discharge (Intake P5)	Valid
WT00005376-2009	-	30/11/14	Industrial discharge (Intake TP4)	Valid
WT00005357-2009	-	30/11/14	Industrial discharge (Intake W5)	Valid
WT00005588-2009	-	31/12/14	Industrial discharge (Intake TP5)	Valid
WT00005643-2009	-	31/12/14	Industrial discharge (Intake E5A)	Valid
WT00005754-2010	-	31/01/15	Industrial discharge (Intake W8)	Valid
WT00005954-2010	-	28/02/15	Industrial discharge (Intake TP789)	Valid
WT00005915-2010	-	31/01/15	Industrial discharge (Intake E5B)	Valid
WT00006102-2010	-	28/02/15	Industrial discharge (Intake M3)	Valid
WT00006415-2010	-	30/04/15	Industrial discharge (Intake MA15)	Valid
WT00006420-2010	-	30/04/15	Industrial discharge (Intake MA17)	Valid
WT00006428-2010	-	30/04/15	Industrial discharge (Intake BR6)	Valid
WT00006609-2010	-	31/05/15	Industrial discharge (Intake HR1)	Valid
WT00006559-2010	-	30/04/15	Industrial discharge (Intake CR1)	Valid

Permit No.	Valid Period		Details	Status
	From	To		
WT00006929-2010	-	30/06/15	Industrial discharge (Intake W1)	Valid
WT00006418-2010	-	30/06/15	Industrial discharge (Intake MA14)	Valid
WT00006865-2010	-	30/06/15	Industrial discharge (Intake BR5)	Valid
WT00007039-2010	-	31/07/15	Industrial discharge (Intake DG1)	Valid
WT00007042-2010	-	31/07/15	Industrial discharge (Intake W3)	Valid
WT00007043-2010	-	31/07/15	Industrial discharge (Intake GL1)	Valid
WT00007130-2010	-	31/07/15	Industrial discharge (Intake BR4)	Valid
WT00007139-2010	-	31/07/15	Industrial discharge (Intake BR6) – SMH17	Valid
WT00007319-2010	-	31/08/15	Industrial discharge (Intake B2)	Valid
Registration of Chemical Waste Producer				
5213-148-D2393-02	---	N/A	Chemical waste types: Spent oil	Valid
5213-172-D2393-01	---	N/A	Chemical waste types: Spent oil	Valid
Construction Noise Permit (CNP)				
GW-RS0692-11	23/08/11	22/02/12	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Hong Kong West Drainage Tunnel (Eastern Portal) (DSD Contract No. DC/2007/10), Tai Hang Road, Causeway Bay, Hong Kong.	Expired
GW-RS0969-11	24/10/11	23/04/12		Valid
GW-RS0813-11	03/09/11	02/01/12	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at Hong Kong West Drainage Tunnel (Western Portal), Cyberport Road, Cyberport, Hong Kong (DSD Contract No. DC/2007/10).	Expired
GW-RS1036-11	16/11/11	02/05/12		Valid
GW-RS0358-12	04/04/12	23/06/12		Valid
GW-RS0756-11	19/08/11	18/02/12	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Section of Pokfulam	Expired

Permit No.	Valid Period		Details	Status
	From	To		
GW-RS0077-12	19/02/12	18/08/12	Road (near Football Field, Pokfulam Road Playground), Hong Kong	Valid
GW-RS1050-11	30/11/11	30/05/12	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at outside Hongkong Electric Centre, Kennedy Road, Hong Kong	Valid
GW-RS0830-11	21/09/11	20/03/12	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at main tunnel and adits of Hong Kong West Drainage Tunnel under Wan Chai, Hong Kong.	Expired
GW-RS0222-12	03/03/12	20/08/12	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at an area near Lover's Stone Garden at Bowen Road, Wan Chai, Hong Kong.	Valid
GW-RS1008-11	23/11/11	22/05/12	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at an area near the junction of Bowen Road and Wan Chai Gap Road, Wan Chai, Hong Kong.	Valid
GW-RS1009-11	23/11/11	22/05/12	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at Main tunnel and adits of Hong Kong West Drainage Tunnel under construction in Central & Western District, Hong Kong.	Expired
GW-RS0732-11	20/08/11	18/02/12	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work and performing prescribed construction work at Main tunnel and adits of Hong Kong West Drainage Tunnel under construction in Central & Western District, Hong Kong.	Valid

**APPENDIX I
WASTE GENERATED QUANTITY**

Monthly Waste Flow Table

Quarter ending	Actual Quantities of Inert C&D Materials Generated Monthly ⁽¹⁾⁽³⁾						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete ⁽⁸⁾	Reused in the Contract	Reused in other Projects ⁽⁴⁾⁽⁵⁾	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics ⁽²⁾	Chemical Waste	Others, e.g. general refuse
	(in m ³)	(in m ³)	(in m ³)	(in m ³)	(in m ³)	(in m ³)	(in Kg)	(in Kg)	(in Kg)	(in Kg)	(in m ³)
Jan-12	1694	53	0	791	850	0	19030	280	0	0	190
Feb-12	1099	72	0	0	1027	0	62340	350	0	4362	258
Mar-12	3608	43	0	0	3564	0	44780	245	0	0	302
Apr-12											
May-12											
Jun-12											
Sub-Total	6400	168	0	791	5441	0	126150	875	0	4362	750
Jul-12											
Aug-12											
Sep-12											
Oct-12											
Nov-12											
Dec-12											
Total ⁽⁶⁾⁽⁷⁾	6400	168	0	791	5441	0	126150	875	0	4362	750

- Notes:
- (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (2) Plastics refer to plastic bottles/containers, plastic/foam from packaging material.
 - (3) Quantities in March 2012 are upto 31 March 2012.
 - (4) Assuming the conversion factor from m³ to ton for rock is 2.5.
 - (5) The materials reused in other Project shall not be treated as waste under the Waste Disposal Ordinance (Cap 354).
 - (6) The figures are included for the sake of completeness of record.
 - (7) The figures in blue font are the prediction quantities, which are not included in the "Total" quantities.
 - (8) Unless states otherwise, the broken concrete is disposed as public fill in PFRFs.

APPENDIX J
SUMMARY OF EXCEEDANCES

Contract No. DC/2007/10 – Design and Construction of Hong Kong West Drainage Tunnel

Exceedance Report

Eastern Portal

- (A) Exceedance Report for Air Quality (1 hour TSP)**
(NIL in the reporting quarter)
- (B) Exceedance Report for Air Quality (24 hours TSP)**
(NIL in the reporting quarter)
- (C) Exceedance Report for Construction Noise**
(Four Action Level exceedances were recorded for the complaints received on 9, 16, 27 January and 3 February 2012)

Western Portal

- (D) Exceedance Report for Air Quality (1 hour TSP)**
(NIL in the reporting quarter)
- (E) Exceedance Report for Air Quality (24 hours TSP)**
(NIL in the reporting quarter)
- (F) Exceedance Report for Construction Noise**
(NIL in the reporting quarter)
- (G) Exceedance Report for Water Quality**
(NIL in the reporting quarter)

Intakes

Intake BR6

- (H) Exceedance Report for Construction Noise**
(One Action Level exceedance was recorded for the complaint received on 27 February 2012)

Intake DG1

- (I) Exceedance Report for Construction Noise**
(NIL in the reporting quarter)

Intake E5A

- (J) Exceedance Report for Construction Noise**
(NIL in the reporting quarter)

Intake E7

- (K) Exceedance Report for Construction Noise**
(NIL in the reporting quarter)

Intake MA14

- (L) Exceedance Report for Construction Noise**
(NIL in the reporting quarter)

Intake PFLR1

- (M) Exceedance Report for Construction Noise**
(One Action Level exceedance was recorded for the complaint received on 6 February 2012)

Intake RR1

- (N) Exceedance Report for Construction Noise**
(NIL in the reporting quarter)

Intake THR2

**(O) Exceedance Report for Construction Noise
(NIL in the reporting quarter)**

Intake W0

**(P) Exceedance Report for Construction Noise
(NIL in the reporting quarter)**

Intake W5

**(Q) Exceedance Report for Construction Noise
(NIL in the reporting quarter)**

Intake W8

**(R) Exceedance Report for Construction Noise
(Three Action Level exceedances were recorded for the complaints received on 13, 17 February and 5 March 2012)**

**(S) Exceedance Report for Construction Ground borne Noise
(NIL in the reporting quarter)**

Intake P5

**(T) Exceedance Report for Construction Noise
(NIL in the reporting quarter)**

**APPENDIX K
COMPLAINT LOGS**

APPENDIX K – COMPLAINT LOG

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
Com-2008-05-003	Construction site at Eastern Portal	22 May 2008	The complaint was lodged by a complainant on 22 May 2008 regarding noise nuisance generated from the construction activities at the construction site of Eastern Portal	<p>According to the Contractor, only one excavator and one generator were operated for the excavation works around 8 am on 22 May 2008 at the Eastern portal. No other construction activities were conducted.</p> <p>In response to the complaint, The Contractor agreed to reschedule their current works activities, with immediate effect from 23 May 2008, that only site preparation works without noise nuisance to the nearby residents will be carried out from 7:00 am to 8:00 am at the Eastern Portal area.</p> <p>Base on the information collected and the monitoring results, the complaint was considered not justifiable since (1) no exceedance of the noise monitoring results was recorded in May and (2) no non-compliance or observation on noise was recorded.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
Com-2008-05-004	Construction site at Western Portal (Marine Works)	31 May 2008	The complaint was lodged by one of the local resident on 31 May 2008 regarding the noise nuisance generated from the marine works at Western Portal.	According to the Contractor, only two derrick barges and one tug boat were operated for the seabed formation works around 18:00 hrs on 31 May 2008 at the Western Portal. No other construction activities were conducted. Base on the information collected and the monitoring results, the complaint was considered not justifiable since (1) no exceedance of the noise monitoring results was recorded in May and (2) no non-compliance or observation on noise was recorded.	Closed
Com-2008-07-007	Construction site at Eastern Portal	2 July 2008	The complaint was lodged by a resident of The Legend on 2 July 2008 regarding noise nuisance generated from the construction activities at the construction site of Eastern Portal	According to the Contractor, only one generator and one drilling rig (Jumbo) were operated for the preparation works around 7:30a.m on 2 July 2008 at the Eastern portal. Construction noise was found from other construction site (Gammon Construction Limited) adjacent to Eastern Portal area.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>In response to the complaint, The Contractor review his forthcoming operations within the Eastern Portal site as previous they agreed, reschedule their current works activities, with immediate effect from 23 May 2008, that only site preparation works without noise nuisance to the nearby residents will be carried out from 7:00 am to 8:00 am at the Eastern Portal area.</p> <p>Additional noise monitoring was conducted on 16 and 17 July 2008 during the drilling rig (Jumbo), excavator and wheel loader were operated for drilling works.</p> <p>Base on the information collected and the monitoring results, the complaint was considered not justifiable since (1) no exceedance of the noise monitoring results was recorded in June and July 2008 and additional noise monitoring (2) no non-compliance or observation on noise was recorded.</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2008-10-011	Construction site at Western Portal	11 October 2008	The complaint was lodged by one of the resident of Victoria Road on 11 October regarding about the noise nuisance generated from the construction works at Western Portal	<p>According to the Contractor, excavation works and marine works including sheet piling works were also conducted at the time of complaint at Western Portal</p> <p>Additional noise monitoring was conducted on 15 October 2008, drilling works, excavation works and marine works including sheet piling works were also conducted. The construction noise levels measured during the construction works were well below the construction noise limit of 75 dB(A)</p> <p>The Contractor agreed to reschedule the starting time of the construction works to 8:15am on every Saturday that without noise nuisance from the construction works to the nearby residents will be carried out from 7:00 am to 8:15 am at the Western Portal area.</p> <p>Base on the information collected, the noise level measured at outside Aegean Terrace during the construction works at Western Portal site were well below the construction</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				noise limit of 75 dB(A). Also, the Contractor has implemented the remedial measure that reschedule the starting time of the construction works to 8:15am on every Saturday immediately after receiving the complaint to minimize the noise nuisance to the nearby residents.	
COM-2008-10-012	Construction site at Intake TP5	15 October 2008	The complaint was lodged by a complainant on 15 October 2008 regarding about the noise generated from the GI works, which starts from 8:30 hrs to 17:30 hrs next to Aigburth at May Road.	According to the information provided by the Contractor, only rotary type drill rigs and water pumps were operated for the GI works at the time of complaint at Intake TP5.	Closed
COM-2008-10-013	Construction site at Intake TP5	31 October 2008	The complaint was lodged by a complainant on 31 October 2008 regarding the black smoke is emitted and noise is generated from the machine at the site (Intake TP5), he needed to close the windows to prevent the black smoke from entering his flat and to attenuate the noise.	Additional site inspection and noise monitoring at the podium of the Valverde at May Road were conducted on 3 Nov 2008 and 24 Oct, 5 Nov, 7 Nov 2008 respectively. The Contractor agreed to reschedule the starting time of the construction works to 9:30am on every Saturday and 8:00 on normal weekdays that	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2008-11-015	Construction site at Intake TP5	4 November 2008	The complaint was lodged by a complainant on 4 November regarding the noise nuisance generated from the construction works at Intake TP5.	<p>without noise nuisance to the nearby residents will be carried out from 7:00 am to 8:00 am at Intake TP5. Acoustic insulating materials have been applied for enclosing water pump and rotary type drill rigs to minimize the noise nuisance to the nearest residents.</p> <p>Base on the information collected, the noise level measured at the podium of the Valverde at May Road were well below the construction noise limit of 75 dB(A) after the Contractor has implemented the remedial measure.</p>	
COM-2008-11-016	Construction site at Western Portal	17 November 2008	The complaint was lodged by a complainant on 17 November 2008 regarding dust nuisance arising from the soil nailing works at the roadside slope of Cyberport	<p>According to the information provided by the Contractor, soil nailing works were conducted and some plant equipments i.e air compressor and generator were operated at the time of complaint at Western Portal.</p> <p>Base on the regular air quality monitoring in November 2008 at Outside Aegean Terrace (AQ2) and Outside The Site Office at Western</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			Road.	Portal (AQ3), the dust levels measured at AQ2 for 1 hour TSP and at AQ3 for 24 hour TSP were well below the Action Level (321µg/m ³ for 1 hour TSP and 156µg/m ³ for 24 hour TSP). Also, the Contractor has implemented the dust suppression measures to prevent dust nuisance from the construction activities including soil nailing works.	
COM-2008-11-019	Construction site at Western Portal	29 November 2008	The complaint was lodged by a complainant on 1 December 2008 regarding noise nuisance at Western Portal at 08:30 hrs approx on 29 November 2008 and 00:30 on 1 December 2008.	According to the information provided by The Contractor, no construction works was carried out at the temporary jetty at the time of complaint (00:30 on 1 December 2008) at Western Portal. However, base on the regular noise monitoring at Outside Aegean Terrace (NC3), the noise level measured during the construction works at Western Portal site were well below the construction noise limit of 75 dB(A).	Closed
	Construction site at Western Portal			The complaint was considered not justifiable as Construction Noise Permit (CNP) – CNP No. GW-RS0827-08 has been granted from	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2008-12-020		28 December 2008	The complaint was lodged by a complainant on 28 December 2008 regarding the excavator was found working within Western Portal works area on Sunday.	EPD for carrying out the construction works at Hong Kong West Drainage Tunnel (Western Portal), Cyberport Road, Cyberport, Hong Kong (DSD Contract No. DC/2007/10) between 1 December 2008 at 1900 hours and 28 February 2009 at 2400 hours. The powered mechanical equipment can be operated during the hours as below: a) Any day not being a general holiday between 1900 – 2300 hours b) General holiday (including Sundays) between 0700 – 1900 hours	
COM-2009-01-021	Muddy Water Discharged into Sea at Western Portal	21 January 2009	Muddy water was observed from discharging into the sea at Western Portal Site	Base on the information collected, the muddy water discharged into the sea is considered due to the operations of excavation of stilling basin and poor condition of the silt curtain. The Contractor agreed to review their current provisions to prevent any muddy water from discharging into the sea again and close check the	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				condition of the silt curtain.	
COM-2009-01-022(A)	Construction site at Western Portal	12 January 2009	The complaint was lodged by a complainant, the assistant of Southern District Councillor about the resident in Baguio Villa near Victoria Road, the complainant concerns on the noisy activities carried out at Western Portal site.	Base on the information collected, the noise level measured at outside Aegean Terrace during the construction works at Western Portal site were well below the construction noise limit of 75 dB(A). Aegean Terrace is at location close to the major site activities compared with Baguio Vila. Also, The Contractor agreed to reschedule their current works activities, no noisy work will be carried out at Western Portal Site before 8:00a.m.	Closed
COM-2009-01-022(B)		21 January 2009	The complaint was lodged by resident of Aegean Terrace at Sassoon Road about the noise nuisance generated from Western Portal Site.		
COM-2009-01-022(C)		21 January 2009	The complaint was lodged by the resident in Baguio Villa near Victoria Road about noisy works at Western Portal Site.		
COM-2009-02-023	Construction site at Eastern Portal	7 February 2009	Complaint of Construction Noise at Early Morning (07:45hrs) at Eastern Portal	Based on the information collected, the construction noise at about 07:45hrs on 7 February 2009 was due to the checking of the backhole by the sub-contractor.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			Site	The Contractor was reminded to strengthen their site supervision and provide sufficient site-specific environmental training for sub-contractor to ensure that such situation would not be recurred.	
COM-2009-03-025	Construction site at Western Portal	2 March 2009 4 March 2009	Complaint of noise generated by midnight works and night-time lighting at Western Portal Site	Base on the information collected, the regular noise monitoring was conducted during the construction works at the restricted hours. The noise measurement results were well below the construction noise limit of 65dB(A) for the period of 0700-2300 hrs on holiday; and 1900-2300 hrs on all other days and baseline level during the night time.	Closed
COM-2009-03-026		7 March 2009	Complaint of pipe hitting noise at midnight at Western Portal Site.		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				mitigation measures for Visual during the construction by controlling the night-time lighting so that the residual visual impacts can be accepted.	
COM-2009-04-028	Construction site at Western Portal	7 April 2009	Complaint of noise generated from the construction works conducted till 11:00pm at Western Portal of the Hong Kong West Drainage Tunnel.	According to the information provided by The Contractor, TBM, conveyor belt, ventilation fan, tower crane and cherry picker were operated for the construction works on 7 April 2009 before 11:00pm and only TBM works with conveyor belt and ventilation fan were operated on 10 April 09 (Sunday). No operation of derrick barge on 10 April 09.	Closed
COM-2009-04-029		10 April 2009	Complaint of noise generated by TBM works at Western Portal.	<p>According to the photos taken on 8 April 2009, misplacement of plant was observed at Western Portal Site. Upon advice, The Contractor immediately moved the fan properly.</p> <p>Based on the information collected, the construction noise levels measured were well below the construction noise limit of 75 dB(A) for the period of 0700-1900 hrs on normal weekdays, 65 dB(A) for the</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>period of 0700-2300 hrs on holiday; and 1900-2300 hrs on all other days and baseline level for the period of 2300-0700 hrs of next day. The ground borne noise levels measured were also well below the construction ground borne noise standards (i.e. 65 dB(A) – Daytime (except General Holiday and Sundays) and 55 dB(A) – Daytime during general holidays and Sunday and all days during Evening (1900 to 2300 hrs). No exceedances of noise level have been recorded in March and April 2009.</p> <p>The Contractor was advised to strictly follow the conditions of the permit to avoid any misplacement of plants in the future. Also, The Contractor should take sufficient noise mitigation measures to minimize the environmental impact on the nearby community as recommended in the approved EIA report.</p> <p>In addition, DNJV already arranged tailors made training for the Production Team including the</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>senior management and foreman to explain the conditions and requirements listed on the CNP and delegated one Engineer to ensure all construction activities and PME's to be used are fully complying with CNP and legislation requirements before the commencement of the construction activities during the restricted hour.</p>	
				<p>Base on the information collected, regular noise Monitoring was conducted during the night time to check the noise levels are complying with the construction noise criteria. The noise levels measured at NC3 during the construction works at night time were well below the construction noise limit.</p> <p>The Contractor was reminded to strengthen their site supervision by delegated Engineer to ensure all construction activities and PME's to be used are fully complying with CNP and legislation requirements and implement necessary noise mitigation measures as</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				recommended in the Approved EIA report to minimize and avoid the construction noise impact to the residents nearby especially during the restricted hours.	
COM-2009-04-030	Construction site at Western Portal	30 April 2009	Complaint of Construction Noise Generated at Night at Western Portal.	According to the site activities diaries, TBM chainage, TBM excavation, installation of segment ring, pea gravel & mortar injection and installation cables & pipes at gantries were the activities conducted in the night of 30 April 2009. In accordance with the night time visit on 15 May 2009, the noise levels at Aegean Terrace was not high but with occasionally sound of locomotive and tower crane operations. No exceedance of noise level was recorded since the commencement of the project works at Western Portal Site. The noise levels measured at NC3 during the construction works were well below the construction noise limit. The Contractor will continue	Closed
COM-2009-05-031		4 May 2009	Complaint of low frequency noise emitted from the construction site at Western Portal.		
		11 May 2009	Complaint of Construction Noise nuisance generated from the Western Portal Site from day to night.		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				implementing their mitigation measures (e.g. Instruct workers not to shout during work in the evening; no horn signal of locomotive after 6:55 pm).	
COM-2009-05-032	Construction site at Eastern Portal	13 May 2009	The complaint was lodged by a resident regarding the Construction Noise Nuisance from the construction works that were carried out from early morning till night time at Eastern Portal Site Area.	Based on the information collected, the noise levels measured at NC1/NC1a and NC2 during the construction works were well below the construction noise limit or baseline level. The Contractor is also committed to implement sufficient noise mitigation measures as recommended in the approved EIA report to minimize the nuisance caused to the nearby residents especially during the restricted hours.	Closed
COM-2009-06-035	Hong Kong West Drainage Tunnel Construction Site at Cyberport	3 June 2009	EPD received a public complaint raised by local resident regarding the transportation and disposal of construction wastes from Hong Kong West Drainage Tunnel Construction Site at Cyberport on 3 June 2009.	Base on the information collected, alternative disposal ground is proposed by The Contractor and they have been submitted the relevant information and sought the approval from Supervising Officer. The Contractor also maintains the daily record with details of each disposal trip from the Site and the disposal ground.	Closed

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COM-2009-06-037	Construction site at Eastern Portal	23 June 2009	The few noise complaints were lodged by a resident of The Legend and Ronsdale Garden regarding the Construction Noise Nuisance from the construction works at Eastern Portal Site Area since 7:00a.m and in the afternoon.	Based on the information collected, the noise levels measured at NC1 and NC2 during the construction works were well below the construction noise limit or baseline level. In response to the complaints, the head of hydraulic breaker has been wrapped with sound proof materials and movable noise barriers were provided for rock excavation to reduce noise. The Contractor is also committed to implement sufficient noise mitigation measures as recommended in the approved EIA report to minimize the nuisance caused to the nearby residents.	Closed
COM-2009-06-038			The complaint was raised by a representative of Goodwell Property Management, she wrote on behalf of the Estate Owner Committe of Legend at Tai Hang about noise nuisance arising from the excacvation works at Eastern Portal site portion. The Committe requested the Contractor to provide mitigation measures to mininise the impact.		
COM-2009-08-040	Construction site at Intake PFLR1	26 August 2009	The complaint was relating to the noise generated from the construction activities of breaking of the existing boundary wall of Pokfulam Road Playground by use of	Noise monitoring results conducted on 1 September 2009 at NC11 - Honey Court for the Intake PFLR1 was submitted and no exceedance was recorded. In addition, based on the regular site inspection conducted	Closed

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			the hand-held electric breaker.	<p>at Intake PFLR1, no observation/non-compliance on air quality was identified. The environmental conditions of the site will be continuously reviewed and monitored.</p> <p>DNJV had installed tarpaulin shielding and cover to mitigate not only the potential emission of exhausted smoke, but also the visual impact to the residents nearby.</p>	
COM-2009-09-042	Construction site at Eastern Portal	21 September 2009	The complaint was raised by a resident of The Legend regarding poor housekeeping and construction noise nuisance from the Eastern Portal Site Area.	<p>Based on the information gathered in the Investigation, the Contractor had taken action immediately to rectify the complaint of poor housekeeping. The white site office was painted green in harmony with the surrounding environment and the site was maintained in a clean and tidy condition. All materials required for temporary works were stored in an orderly manner.</p> <p>Regarding the complaint of construction noise impact, the noise levels measured at The Legend</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>(NC2) during the construction works in the normal working hours were well below the construction noise limit level.</p> <p>Nevertheless, the Contractor is also committed to implementing sufficient noise mitigation measures as recommended in the approved EIA report to minimize the nuisance caused to the nearby residents and provide training for the workers to increase awareness of their environmental responsibilities.</p>	
COM-2009-10-044	Construction site at Eastern Portal	6 and 7 October 2009	The complaint was raised by a resident of The Legend and Ronsdale Garden regarding the construction noise nuisance from the Eastern Portal Site Area.	Based on the information gathered in the Investigation, the noise levels measured (additional noise monitoring) at The Legend (NC2) and Ronsdale Garden during the construction works including rock breaking works and soil nailing works were ranged from 68.4dB(A) to 75.3 dB(A) in the normal working hours.	Closed
COM-2009-10-045					

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>recommended in the approved EIA report to minimize the nuisance caused to the nearby residents and provide training for the workers to increase awareness of their environmental responsibilities.</p> <p>It is recommended to increase the construction noise monitoring frequency for Eastern Portal Site to check the mitigation effectiveness.</p>	
COM-2009-11-054	Construction site at Western Portal	23 and 29 November 2009	The complaint was raised by a resident of Aegean Terrace regarding the construction noise nuisance from the Western Portal Site Area.	<p>Base on the information collected, the noise levels measured at NC3 during the construction works were well below the construction noise limit.</p>	Closed
				<p>Nevertheless, the Contractor is also committed to implement sufficient noise mitigation measures as recommended in the approved EIA report, Clause 5.4.15 to minimize/avoid the nuisance caused to the nearby residents.</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2009-12-059	Construction site at Intake MB16	27 November 2009	The complaint was received on 2 November 2009 regarding the dust nuisance caused by the works at the Construction Site at Mount Butler Road near Clementi Road (Intake MB16). EPD subsequently issued a notice of complaint.	<p>Based on the information collected, the Contractor has implemented the dust suppression measures to prevent dust nuisance from the construction activities.</p> <p>During the site inspection in November 2009, slope improvement works including soil nailing works were observed from other construction site adjacent to DNJV's construction works at Mount Butler Road.</p>	Closed
COM-2009-12-061	Construction site at Intake PFLR1	23 and 28 December 2009	Two public complaints were received from the resident of Pok Fu Lam Road on 23rd and 28th December 2009 respectively about the construction noise nuisance from the construction site at Intake PFLR 1.	<p>Based on the information gathered in the Investigation, the noise levels measured at Honey Court (NC11) during the construction works were well below the construction noise limit.</p> <p>The location of the designated noise monitoring station (NC11 – Honey Court) is at location close to the construction site compared with Pok Fu Lam Height.</p> <p>In addition, a large scale innovation works being undertaken at a resident building adjacent to the Pok Fu Lam Height was observed during the</p>	Closed

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				<p>routine site inspection. The innovation works included hammering and drilling on the outer walls of the building and contributed significantly to the noisy environment.</p>	
COM-2010-01-062	Construction site at Western Portal	3 January 2010	<p>The public complaint was received from the resident of Bel-Air through the project hotline on 3rd January 2010 about “wooning” sound heard after midnight, and he suspected that the sound was coming from the construction sites at Cyberport.</p>	<p>Based on the information collected, the noise levels measured at NC3 during the construction works were well below the baseline level. The location of the designated noise monitoring station (NC3 – Outside Aegean Terrace) is at location close to the construction site compared with Bel-Air.</p> <p>The Contractor will continue implementing the existing noise mitigation measures at the Western Portal to minimize the environmental impact to the nearby residents.</p>	Closed
COM-2010-01-063 COM-2010-01-066(1), (2) and (3)	Intake MB16	20 January 2010 23, 25, 27 January and 2 February 2010	<p>The first complaint was raised by the resident at No. 58 Mount Butler Road about the noise and vibration generated from the works on 20 January 2010.</p> <p>Three complaints were raised</p>	<p>Based on the EIA assessment results, No. 58 Mount Butler Road and Amber Lodge are not the potential ground borne noise sensitive receivers as they are not within the influence zone near the Main Tunnel alignments from Cyberport to Tai Hang and the alignments of the adits.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			<p>by the resident of Amber Lodge through the Project Hotline regarding the low frequent vibration from underground on 23, 25, 27 January and 2 February 2010.</p>	<p>The additional ground borne noise levels measured at inside Amber Lodge during the TBM works were well within the construction ground borne noise standards.</p> <p>The Contractor volunteered to stop the operation of the East TBM between midnight and 07:00 hours in Week 6 and 7 after which the machine has moved far away from these premises</p>	
COM-2010-02-073	Western Portal	3 February 2010	<p>Complaint of noise generated by the operation of plants, rock falling and flash lighting within Western Portal site area.</p>	<p>Base on the regular noise monitoring, the noise levels measured at NC3 during the construction works were well below the baseline level.</p> <p>The Contractor will continue implementing the existing noise mitigation measures at the Western Portal to minimize the environmental impact to the nearby residents.</p>	Closed
COM-2010-03-080	Intake PFLR1	1 March 2010	<p>The public complaint was received from the resident of Honey Court referred by a DC member on 1st March 2010 about the construction</p>	<p>Based on the information gathered in the Investigation, the noise levels measured at Honey Court (NC11) in February and March 2010 were ranged from 62.3 dB(A) to 74.7</p>	Closed

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			noise nuisance from the construction site at Intake PFLR 1	<p>dB(A). The noise levels were marginally below the 75dB (A) limit level.</p> <p>The contractor was reminded to implement necessary mitigation measures to curb inducing contribution to the surrounding noise environment.</p>	
COM-2010-03-081	Intake TP789	5 March 2010	The complaint was received from Kerry Management Ltd. on 5th March 2010 about the construction noise complaints raised by some tenants of Tavistock. They complained about the noisy activities being carried out at Intake TP789 on Saturday.	<p>Based on the information gathered in the investigation, the noise levels measured at Tregunter Path near Tavistock were below the construction noise limit and the Contractor has already implemented the noise mitigation measures to reduce noise impact to the residents arising from the construction works.</p> <p>Nevertheless, we reminded the Contractor to closely monitor the effective implementation of the existing noise mitigation measures at Intake TP789. Review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2010-03-082 and COM-2010-03-087	Western Portal	6 March 2010 15 March 2010	Two public complaints were received from the residents of Bel-Air at Western Portal on 6th and 15th March 2010 about the Construction Noise and Dust Nuisance from Hong Kong West Drainage Tunnel Construction Site at Cyberport (i.e. Western Portal Site) respectively.	Based on the information collected, the noise and air quality levels measured at NC3 and AQ2/AQ3 during the construction works were below the noise and air quality criteria respectively. Also, the Contractor has implemented appropriate environmental mitigation measures on site to reduce noise and dust impact to the residents arising from the construction works. Nevertheless, the Contractor was reminded to review the effectiveness of the implemented noise and air quality mitigation measures from time to time during different construction phases.	Closed
COM-2010-04-094	Western Portal	9 April 2010	The public complaint was received by EPD hotline on 9 th April 2010 regarding construction dust nuisance from the Hong Kong West Drainage Tunnel construction site at Cyberport (i.e. Western Portal Site)	Based on the information collected, the air quality levels measured at AQ2 and AQ3 during the construction works were below the air quality criteria. Also, the Contractor has implemented appropriate dust mitigation measures on site to reduce dust impact to the residents arising from the construction works. Although the air quality levels measured at AQ2 and	Closed

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				<p>AQ3 were below the air quality criteria, we advised the Contractor to maintain the existing air quality mitigation measures, to reduce the environmental impact on the nearby residents.</p> <p>Nevertheless, the Contractor was reminded to review the existing measures if such measures are enough and appropriate to suit the site condition from time to time during different construction phases to minimize the dust nuisance.</p>	
COM-2010-04-097	Intake TP789/TP4	22 April 2010	The complaint was received from resident of Tregunter Tower on 22 nd April 2010 about the noisy activities being carried out at Intake TP789/TP4 in the morning.	<p>Based on the information gathered in the investigation, the noise levels measured at Tregunter Path near Tavistock were below the construction noise limit and the Contractor has further improved the noise mitigation measures to reduce noise impact to the residents arising from the noise generation works.</p> <p>The Contractor agreed to reschedule the starting time of the noisy works to 9:00am on in the morning that no noisy works such as rock breaking</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				will be conducted before 9:00am. In addition, enclosures consist of noise absorption blankets have been applied for enclosing Intakes construction areas to minimize the noise nuisance to the nearest residents.	
COM-2010-04-100	Western Portal	30 April 2010	The public complaint was received from the resident of Bel-Air on 30 th April 2010 regarding the dust nuisance generated during loading / unloading operation from two barges at pier of Cyberport. Dark smoke was also emitted from the two barges.	Based on the information collected, the air quality levels measured at AQ2 and AQ3 during the construction works were below the air quality criteria. The Contractor has taken initiative to minimize dust nuisance to the nearby residents by implementation of additional mitigation measures as below: <ul style="list-style-type: none"> - To plan the installation of 3-sided curtain-like enclosure at the conveyor discharge point to the barge. - Mechanical cover closed even for empty trucks leaving the Site. - Written advice to subcontractor on the subject of dust suppression and speeding of vehicles. - Toolbox training to drivers on the new measures. 	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2010-05-105	Western Portal	7 May 2010	The second complaint was received via EPD Hotline on 7 May 2010. The anonymous complainant concerned about the dark smoke emitted from the barges on 4 May 2010 and many dump trucks parking outside the Western Portal Site on 5, 6 and 7 May 2010.	Based on the information collected, the air quality levels measured at AQ2 and AQ3 during the construction works were below the air quality criteria.	Closed
COM-2010-05-105 (2)		17 May 2010	The complaint was received via EPD Hotline on 17 May 2010. The anonymous complainant complaint about the open stockpile of dusty materials without covered entirely.	<p>Although the air quality levels measured at AQ2 and AQ3 were below the air quality criteria, we advised the Contractor to maintain the existing air quality mitigation measures and review the existing measures if such measures are enough and appropriate to suit the site condition from time to time during different construction phases to minimize the dust nuisance.</p> <p>Other suitable dust control measures as stipulated in the Air Pollution Control (Construction Dust) Regulation, where appropriate, should be adopted.</p> <p>Nevertheless, the Contractor is also committed to take sufficient dust mitigation measures as recommended in the approved EIA report including</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				installation of 3-sided curtain-like enclosure at the conveyor discharge point to the barge to minimize the dust nuisance on the nearby residents.	
COM-2010-06-113	Intake PFLR1	2 June 2010	The complaint was received by DSD on 2 June 2010 regarding siren sound was generated from the site throughout the day which caused nuisance.	The noise source was generated from the alert system of the backhoe during operation. The backhoe was removed off site on 3 June 2010.	Closed
	Western Portal	15 June 2010	A public complaint was received by EPD hotline on 15th June 2010 complained about the construction works from Hong Kong West Drainage Tunnel construction site at Cyberport (i.e. Western Portal Site) affect their health of respiratory system	Based on the information collected, the air quality levels measured at AQ2 and AQ3 during the construction works were below the Action Level (321µg/m ³ for 1 hour TSP and 156µg/m ³ for 24 hour TSP). Also, the Contractor has implemented appropriate dust mitigation measures, such as providing water sprays on exposed surface, covering dusty materials and placing dust generation works in an area sheltered on the top and three sides etc on site to reduce dust impact to the residents arising from the construction works.	Closed
COM-2010-07-121	Western Portal	15 July 2010	Cyberport Management Office lodged a complaint in	DNJV has delivered the reply letter to Cyberport Management Office on	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			<p>writing regarding the sands and mud left by the dump trucks on Cyberport road</p>	<p>26 July 2010 stating the following:- The stain is not mud or debris. It is liquid of granite powder. Stain on the road was caused by heavy rainstorm which brings moisture to granite powder in trucks.</p> <p>The trucks have been equipped with tailor-made tanks to receive the liquid of granite powder. To prevent reoccurrence, DNJV will reinforce checking of these tanks and other truck conditions at work site to ensure no dripping before departure.</p> <p>In this regard, the Contractor was reminded that all vehicles and plant should be cleaned before leaving the construction site to ensure no earth, mud and debris or other wastes is deposited on roads. Proper maintenance of the tailor-made tanks equipped at the trucks is also needed to avoid any leakage.</p>	
COM-2010-07-123 (1)	Eastern Portal	2 August 2010	<p>The complaint was received through the Project Hotline regarding the noise generated from construction vehicles.</p>	<p>Based on the information collected, the noise levels measured at NC1/NC1a and NC2 during the construction works were well below</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2010-07-123 (2)		2 August 2010	The complaint was received by DSD concerning the noise generated from construction site at 19:00.	the construction noise limit or baseline level. The Contractor is also committed to implement sufficient noise mitigation measures as recommended in the approved EIA report to minimize the nuisance caused to the nearby residents especially during the restricted hours.	
COM-2010-08-125		3 August 2010	The complaint was received by DSD concerning the noise generated from construction site until 8:00 pm every night.		
COM-2010-08-124	Intake TP789/TP4	2 August 2010	The complaint was received by DSD regarding the construction works at Tregunter Path is extremely noisy and diminishes the ability of residents of the neighborhood to enjoy outdoor facilities	Based on the information gathered in the investigation, the noise levels at Tregunter Tower was within the construction noise limit of 75dB(A). The Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures continuously as below: <ul style="list-style-type: none"> - Properly maintained and operated the construction plant (well-greased, damage and worn parts promptly replaced) - To install noise absorption blankets at the appropriate area to mitigate noise generated by the works. 	Closed
COM-2010-08-124 (con'd)		5 August 2010	The complaint was received by DSD regarding the construction works at Tregunter Path is extremely noisy and diminishes the ability of residents of the neighborhood to enjoy outdoor facilities		
COM-2010-08-129		12 August 2010	The complaint was raised by the resident of Tregunter Path for the noisy works which		

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			was carried out after 18:00hrs at Intake TP4	- To arrange the construction working period at Tregunter Path starting from 13th August 2010 as below: Monday – Friday: 08:00hrs to 18:00hrs Saturday: 08:30hrs to 18:00hrs Sunday and Public Holiday: No Works	
COM-2010-08-129		12 August 2010	The complaint was received from Protech Property Management Limited (the building manager of Tregunter Tower, 14 Tregunter Path, Mid-Levels, Hong Kong) regarding the noisy construction works at Tregunter Path		
COM-2010-08-129 (2)		13 August 2010	The complaint was received by RSS concerning the noisy work from the construction site on Saturday		
COM-2010-10-151	Eastern Portal	15 October 2010	A complaint was received from the resident of The Legend through the supervising officer on 15th October 2010 about the construction dust nuisance from Eastern Portal Site Area.	Based on the information gathered in the investigation, no exceedance of air quality level was recorded at AQ1 since the commencement of the project works for Eastern Portal Site. The potential source of air quality impact arising from the removal of tunneling spoils from the tunnel portals as well as the vehicular emissions is minimized as all TBM excavation works have been completed since 5 October 2010.	Closed

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COM-2010-10-154	Eastern Portal	18 October 2010	<p>A complaint was received from the resident of Ronsdale Garden through the DSD on 18th October 2010 about the construction noise nuisance from Eastern Portal Site Area.</p> <p>According to the complainant, the noise seems to be generated by a pump.</p>	<p>Based on the information gathered in the investigation, the noise levels measured at The Legend (NC2) and outside True Light Middle School of Hong Kong (NC1) were well below the limit level.</p> <p>The Contractor agreed to terminate the operation of pump during the evening (1900 – 2300) and night (2300 – 0700) time since end of October 2010 and committed to implementing sufficient noise mitigation measures as recommended in the approved EIA report to minimize the nuisance caused to the nearby residents.</p>	Closed
COM-2010-10-155	Intake RR1	11 October 2010	<p>A letter from the Property Management of Peakville Court - Hong Yip Service Company Ltd was received by DNJV on 11th October 2010 about the construction noise nuisance and wastewater generated from Intake RR1 Site Area.</p>	<p>Based on the information gathered in the investigation, the noise levels measured at Peakville Court (NC13) and Ying Wa Girl's School (NC12) were below the baseline/limit level.</p> <p>In addition, water runoff was observed leaked out to the public road from the site area according to the regular site inspection.</p> <p>The Contractor will seal the bottom of barriers with concrete or provided</p>	Closed

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				with sandbag as early as possible.	
COM-2010-11-160	Intake TP789	5 November 2010	The complaint was received from Kerry Property Management and advised that some complaints from the residents of Tavistock about low frequency noise generated by the power pack within Site Portion TP789.	Based on the information gathered in the investigation, the noise levels measured at near Intake TP789 were below the limit level after the Contractor implement noise mitigation measures for the noise generation activities.	Closed
COM-2010-11-160(2)	Intake TP789	9 November 2010	Some residents complained the low frequency noise after the addition of sound proof sheets on the power pack at Intake TP789.		
COM-2010-11-163	Western Portal	6 November 2010	A complaint was received from a complainant regarding noise nuisance caused by spoils dropping directly from conveyor belt into barge (rock hitting sound) at Western Portal.	Based on the information gathered in the investigation, the noise levels measured at NC3 were below the limit level.	Closed
COM-2010-11-163(2)	Western Portal	7 November 2010	A complaint was received from a complainant regarding noise nuisance caused by spoils dropping from conveyor belt into storage basin (rock hitting sound). The complainant also		

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			complained the noise of ventilation fans at the Western Portal area.		
COM-2010-11-164	Intake TP5	10 November 2010	Kerry Property Management Services received several complaints from the residents of Valverde on 10 November 2010 morning regarding working noise emitted from the Intake TP5 work site in early morning (before 7:30am).	<p>Base on the information collected, the ad-hoc noise monitoring results measured at near Valverde was met the acceptable noise levels. Drill and blast is not considered with respect to noise annoyance, as the duration of blasting is very short and infrequent.</p> <p>The Contractor volunteered to cancel late blasts and scheduling all blasts before 7pm as far as possible until the nearby adit blasting works completed by mid of December 2010 tentatively.</p>	Closed
COM-2010-11-165	Intake TP5	15 and 17 November 2010	Kerry Property Management Ltd phoned DSD at about 17:08 hrs on 15 November 2010 relaying some complaints from the residents of Valverde about the noise/vibration due to the blasting works in past weeks. Jennifer also requested DNJV not to carry out blasting works at nights.		
COM-2010-12-170	Intake DG1	7 December 2010	The complaint was received regarding the noise arising from the excavation works, starting from 9:00 hrs, in the construction site near Evergreen Villa of Stubbs	Based on the information gathered in the Investigation, the noise levels measured at NC4 and NC6 in November and December 2010 were below the construction noise limit level or baseline levels.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			Road.	<p>The Contractor has taken initiative to erect noise absorption blankets at the site boundary to minimize noise nuisance to the nearby residents.</p> <p>The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.</p>	
COM-2010-12-171	Intake MB16	8 December 2010	The complainant complained the works near Mount Butler Road generated dust, thus affecting the air quality in the vicinity.	DNJV would arrange water spraying at the entrance of Area B. In addition, Environmental Team and RSS would closely monitor to ensure relevant measures are effectively implemented.	Closed
COM-2010-12-173	Intake W5	14 December 2010	A complaint was received from a complainant regarding noisy construction activities at Site Portion W5 had affected her niece's study to prepare for examination.	DSD are now constructing an intake at the subject site under Hong Kong West Drainage Tunnel project. The construction work at Site Portion is expected for completion in end 2011. At the moment, the pipe piling works have been completed and the Contractor will carry out grouting work in this week and then excavation work afterwards. The noise generated by excavation works should be less than that of pipe piling	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				works. Nevertheless, DSD would closely monitor the works in order to mitigate the noise impact to the nearby residents.	
COM-2010-12-178	Intake TP5	22 December 2010	Kerry Property Management Ltd notified that some complaints from the residents regarding the early commencement of the noise works at Intake Ste TP5 (earlier than 08:00hrs) in the past few days.	As advised by DNJV on 23 December 2010, they would carry out the work at site portion TP5 from 08:00 hrs to 19:00 hrs. Eddie Yau, DNJV Public Relation Manager had already explained to Kerry about the progress and arrangement at Site Portion TP5.	Closed
COM-2010-12-179	Eastern Portal	24 December 2010	The Property Management Office of The Legend referred the complaint from the resident to DSD regarding the intermediate noise from Eastern Portal site portion in the morning and at night.	Based on the information gathered in the investigation, the noise levels measured at NC1 and NC2 were below the limit level.	Closed
COM-2011-01-181	Eastern Portal	21 January 2011	The Property Management Office of Legend called DNJV to reflect a resident's concern on early construction noise at 8:30am on Saturday.	Based on the information gathered in the investigation, the noise levels measured at NC1 and NC2 were below the limit level. The breaking work to be completed by that day.	Closed
COM-2011-02-186	Intake GL1	18 February 2011	A complaint was received from the resident of Green Lane through the ICC on 18th February 2011 about the	Based on the information gathered in the investigation, the noise levels measured at near Green Lane was marginal below the construction	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			construction noise generated from the plant equipments being operated at Intake GL1 from early in the morning and ends at around 19:00 at night.	noise limit. However, the Contractor has already implemented the noise mitigation measures to reduce noise impact. The major noise source due to the raise boring works has been finished since 26th February 2011	
COM-2011-02-188	Western Portal	25 February 2011	The complaint was received from the resident of Bel Air who called hotline at 3am and 4pm on 25 Feb 2011 to complaint about noise. The complainant refuses to give details on the noise. He claims that he will report this to the Police and requested DNJV to provide him with copy of CNP.	Based on the information gathered in the investigation, the noise levels measured at NC3 was below the limit level.	Closed
COM-2011-03-189	Western Portal	7 March 2011	Property management office of Aigburth and Valverde transferred noise complaints of residents about the vibration and early working noise emitting from the TP5 and TP789. DNJV replied to explain to the PMO.	DNJV had already explained to Property management office of Aigburth and Valverde about the progress and arrangement at Site Portion TP5. The raise boring work to be completed by that day.	Closed
COM-2011-03-190	Western Portal	7 March 2011	The complaint was received from the resident of Aegean	Based on the information gathered in the investigation, the noise levels	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-03-193 (1)	Western Portal	14 March 2011	Terrace who complained about the night-time noise of Western Portal. DNJV would review the works during the restricted hours and further improve the enclosure where necessary.	measured at Western Portal was below the construction noise limit. However, the Contractor has already implemented the noise mitigation measures to reduce noise impact.	
COM-2011-03-193 (2)	Western Portal	16 March 2011			
COM-2011-03-192	Intake B2	14 March 2011	The PMO of Grand House at Macdonnell Road complained about the construction noise at the intake B2. In the site portion, rock excavation works was being carried out. The works was anticipated to complete in end April 2011.	Based on the information gathered in the investigation, the noise levels measured at near B2 was marginal below the construction noise limit. The Contractor has taken initiative to enclose the hydraulic breaker with noise absorption blankets to minimize noise nuisance to the nearby residents. The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.	Closed
COM-2011-03-195	Intake CR1	28 March 2011	The complaint was received from the resident of Conduit Tower, who complained about the construction noise at the intake CR1.	Based on the information gathered in the investigation, the noise levels measured at near CR1 was well below the construction noise limit. The Contractor has taken initiative to erect noise absorption blankets at the whole site boundary to minimize noise nuisance to the nearby residents.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.</p>	
COM-2011-05-210	Intake GL1	30 May 2011	<p>The complaint was raised from the resident of Green Lane, who complained about the construction noise at the intake GL1.</p>	<p>Based on the information gathered in the investigation, the noise levels measured at near Green Lane was well below the construction noise limit. However, the Contractor has already implemented the noise mitigation measures to reduce noise impact.</p>	Closed
COM-2011-05-211	Intake CR1	30 May 2011	<p>The complaint was received from the resident of Conduit Tower, who complained about the construction noise at the intake CR1. The complainant mainly concerned that the noisy works at Intake CR1 started at 8:00 hrs everyday is too early. He requested to defer the working hours later.</p>	<p>Based on the information gathered in the investigation, the noise levels measured at near CR1 was well below the construction noise limit. The Contractor has taken initiative to erect noise absorption blankets at the whole site boundary to minimize noise nuisance to the nearby residents. The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-06-214	Intake P5	2 June 2011	The public complaint was raised on 2 nd June 2011 via Environmental Protection Department (EPD) regarding the construction noise nuisance from the Hong Kong West Drainage Tunnel construction site at Intake P5.	Based on the information gathered in the investigation, the noise levels measured at near P5 was well below the construction noise limit. In addition, the pipe-piling work has been stopped until the end of July 2011. However, the Contractor has prepared the remedial action that should be taken while starting the pipe-piling work. The Contractor was reminded to review the effectiveness of the implemented noise mitigation measures from time to time during different construction phases.	Closed
COM-2011-07-218	Western Portal	2 July 2011	A public complaint was received from the resident of Aegean Terrace on 2nd July 2011 regarding the construction noise nuisance from the Hong Kong West Drainage Tunnel construction site at Cyberport (i.e. Western Portal Site) near Aegean Terrace.	Based on the information gathered in the investigation, the noise levels measured at Western Portal was below the construction noise limit. However, the Contractor has already implemented the noise mitigation measures to reduce noise impact.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-07-219	Intake P5	8 July 2011	A public complaint was received from the resident of Belmont Court on 8th July 2011 and suspected in relation to the construction noise nuisance from the Hong Kong West Drainage Tunnel construction site at Intake P5.	Based on the information gathered in the investigation, the noise levels measured at near P5 was well below the construction noise limit. In addition, the pipe-piling work has been stopped until the end of July 2011. However, the Contractor has prepared the remedial action that should be taken while starting the pipe-piling work.	Closed
COM-2011-07-225	Intake PFLR1	27 July 2011	A resident, lives near Intake PFLR1, called DSD complaining the noise generated from the RBM. The noise probably generated from the RBM drilling rig.	Based on the information gathered in the investigation, the noise levels measured at near PFLR1 was below the construction noise limit. In addition, the Contractor has taken initiative to enclose or wrap the noise source with sound insulating materials to minimize noise nuisance to the nearby residents.	Closed
COM-2011-07-227	Intake CR1	30 July 2011	A resident complained about the noise from the Site Portion CR1. She said it was not supposed to work on Saturdays.	DNJV responded that the working hours are from Mondays to Saturdays. Currently, pipe piling works were in progress. They would improve the mitigation measure. According to the noise level measured at podium of Conduit Tower starting at 10:09 hrs on 1 August 2011, it was 73.5 dB(A). The works was completed at 9:10 hrs on 2 August 2011.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-07-228	Eastern Portal	29 July 2011	<p>The complaint was lodged by a complainant who referred some residents' complaints about the dust and smoke generated from Eastern Portal tunneling works recently. He urged to implement an effective and protective mitigation measures as soon as possible.</p>	<p>Both the 1-hour and 24-hour TSP monitoring results in July 2011 showed dust levels at True Light Secondary School were under Action and Limit Levels.</p> <p>The potential sources of smoke or dust may be occasionally generated at the Eastern Portal as a result of the difference in atmospheric condition such as temperature and humidity inside and outside the tunnel. This is a normal atmospheric phenomenon and did not constitute to environmental impacts.</p> <p>There are sufficient measures to minimize the smoke or dust emission, such as sprinkle system inside adits under blasting works. There was no deficiency recorded in the Eastern Portal.</p> <p>Ventilation system inside the tunnel was designed to extract the blasting fume from adits towards the adit dust scrubber in the Western Portal and then discharged locally. There should not be blasting fume accumulated in the Eastern Portal with a normal ventilation system.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-08-229	W0	9 August 2011	A resident complained about noise generated from DSD works area in the park on 24 Stubbs Road. The works caused obstruction to pedestrians and affected the environment. The complainant requested to obtain the contact of responsible person of the works.	Based on the information gathered in the investigation, the noise levels measured at the Hong Kong Academy was below the construction noise limit. According to the regular weekly site inspections in July and August 2011, there was no major noisy activity to be conducted at Intake W0. However, the Contractor has taken initiative to minimize noise nuisance to the nearby residents by implementation of mitigation measures before the time of complaint.	Closed
COM-2011-08-230	EP	11 August 2011	A resident complained about the noise generated from rock breaking works at Eastern Portal during past few weeks. The complainant said that the noise was deafening and the breaking works was continuously carried out from 08:00 hrs to 18:00 hrs without consider the feeling of residents living nearby. It caused great nuisance to them.	Based on the information gathered in the investigation, the noise levels measured at the Legend was below the construction noise limit. However, the work was temporarily ceased after the complaint case emerged. To alleviate the breaking noise, the contractor plans to implement mitigation measures as far as practical. They may include wrapping the breaking head, erecting noise barriers or blankets, and controlling breaking duration.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-08-232	W10	24 August 2011	A complainant said that noise came out from our Site Portion W10 near junction between Kotewall Road and University Drive, i.e. Intake W10 around 7:00 am on 19 August 2011 and requested us to keep the noise down in the early morning.	The Contractor will take the following follow-up measures to alleviate the noise impacts from our site to the stakeholders in the vicinity with immediate effect: 1. All noisy activities, the start of machine including Raise Boring Machine or other supporting plants/equipments would only be started after 08:00hrs; 2. Only non-noisy activities i.e. site safety briefing, body stretching exercise etc. could be carried out within the Site Portion before 08:00hrs.	Closed
COM-2011-08-233	P5	25 August 2011	A resident complained that the noise generated from the Site Portion at the junction of Kotewall Road and Robinson Road caused immense nuisance.	Based on the information gathered in the investigation, the noise levels measured at the Legend was below the construction noise limit. The Contractor undertook some measures to alleviate the noise emission, as observed during site inspections. After receiving the complaint, the Contractor further reinforced the noise reduction measures that include extending noise barriers into a direction facing toward Villa Veneto, installing noise blankets at the piling rig curtain.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>In addition, the Contractor controlled the piling duration in order to minimize a continuous and persistent emission of piling noise.</p> <p>In early September, it was observed in site inspections that a large scale of building innovation work started in Villa Veneto. Continuous breaking noise from the innovation work imposed difficulties to justify noise sources and it may induce complaints from the general public.</p>	
COM-2011-08-234	BR5	26 August 2011	<p>The complainant is from the PMO of Camelot Height (金巒閣) on Kennedy Road (near Site Portion BR5). He said that construction noise, generated from the work site on the slope at the back of their building, was heard at about 07:30 hrs recently. It caused great nuisance to residents.</p>	<p>The Contractor will take the following follow-up measures to alleviate the noise impacts from our site to the stakeholders in the vicinity with immediate effect:</p> <ol style="list-style-type: none"> 1. All noisy activities, the start of machine including Raise Boring Machine or other supporting plants/equipments would only be started after 08:00hrs; 2. Only non-noisy activities i.e. site safety briefing, body stretching exercise etc. could be carried out within the Site Portion before 08:00hrs. 	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-09-239	MA14	28 September 2011	A resident from PMO of Harbour View complained about the construction works of Site Portion MA14 near Magazine Gap Road started before 7:00hrs on 28 September 2011. The noise generated by the construction plants i.e. RBM was annoying. He requested to keep the noise down in the early morning.	The Contractor will take the following follow-up measures to alleviate the noise impacts from our site to the stakeholders in the vicinity with immediate effect: 1. All noisy activities, the start of machine including Raise Boring Machine or other supporting plants/equipments would only be started after 08:00hrs; 2. Only non-noisy activities i.e. site safety briefing, body stretching exercise etc. could be carried out within the Site Portion before 08:00hrs.	Closed
COM-2011-10-240	M3	23 October 2011	A resident complained that the noisy drilling works were carried out at our Site Portion M3 near May Road on Sunday. At the time of the complaint, there are two workers of a subcontractor who entered into the M3 working area at about 2pm, without notifying the Contractor. The workers started excavating the bottom of the drop-shaft manually.	The Contractor is well aware of the related regulations about using powered mechanical plants in restricted hours. The Contractor was maintaining a close communication with all sub-contractors working in this Project. There was no previous case happened in other subcontractors and therefore it was believed that it was a discrete incident. The incident was attributed to the workers' ignorance of such regulations. The Contractor delivered an additional relevant training to	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>brief the sub-contractor soon after the incident. It was re-iterated in the training that the subcontractor and his workers should strictly adhere to the related regulations, and they should obtain approval from the Contractor in advance to carry out works during restricted hours.</p>	
COM-2011-11-242	EP	16 November 2011	<p>A resident complained about the noise at night around 9pm to 10pm in his premises at Ronsdale Garden. In addition, noisy construction has been carried out near Ronsdale Garden during the daytime recently.</p>	<p>The Contractor will take the following follow-up measures to alleviate the noise impacts from our site to the stakeholders in the vicinity with immediate effect:</p> <ol style="list-style-type: none"> 1. Rock breaking works due to the removal of temporary decking, structure and the river dam would be carried out intermittently. 2. RSS and the Contractor would regularly check the stream condition to prevent mosquito breeding, 3. The Contractor was reminded to expedite the works and implement noise mitigation measures as far as practicable. 	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-11-243	BR6	22 November 2011	A resident at Ewan Court complained that a big noise, which should be generated by blasting works at intake BR6, was heard at about 13:49 at the day of complain. Some other residents heard similar “bang” noise last week at 6pm to 9pm.	The complainant was advised that two blasts per day were in progress at adit BR6. The Contractor will take the following follow-up measures: 1. Only one blast per day would be conducted starting on 28 November 2011 2. RSS would closely monitor the whole blasting process	Closed
COM-2011-11-244	DG1	24 November 2011	A resident at Villa Monte Rosa was annoyed by the noise generated from intake DG1 for couple of days. She asked when such noisy works would be completed. The resident added that more mosquitoes had been found recently and asked if the Contractor would take any measures against mosquito breeding.	The Contractor will take the following follow-up measures to alleviate the noise impacts from our site to the stakeholders in the vicinity with immediate effect: 1. The breaker head was wrapped by noise absorptive materials 2. Sound proof sheet would be erected on the side facing Villa Monte Rosa 3. Mosquito oil would also be sprayed on the afternoon of 24 November 2011	Closed
COM-2011-11-245	TP5	24 November 2011	A resident nearby would like to know the completion date of intakes on May Road. He complained about that such works started making noise at around 8:20am and questioned if such works got	The Contractor will take the following follow-up measures to alleviate the noise impacts from our site to the stakeholders in the vicinity with immediate effect: 1. Sound proof insulation sheet has been installed to remediate the	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
			the permission to start as early as 8pm in the morning.	noise nuisance generated by the rock breaking works during the removal of the temporary structure 2. Noisy works would be carried out starting at 9am instead of 8am 3. RSS would closely monitor the site condition	
COM-2011-11-247	HKU1	17 November 2011	A professor at the University of Hong Kong complained about the percussive drilling noise generated from intake HKU1. The works started on 16 November at about 1pm. He requested to take steps to halt the severe noise.	Noise enclosure with Sound proof sheet was erected on 23 November 2011.	Closed
COM-2011-12-248	EP	1 December 2011	A resident from Ronsdale Garden complained about the noise nuisance at Eastern Portal	The drill of the breaker was wrapped up by noise absorptive materials. Sound proof sheets were erected on 5 December 2011 to further mitigate the noise. Regular noise monitoring would be conducted.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2011-12-249	EP	12 December 2011	The complainant complained that water was found flowing onto carriageway and pedestrian from Eastern Portal.	The drainage system at EP has been cleaned up and cleaning frequency would be increased when necessary. All drivers were reminded to wash their vehicles' wheels within EP compound.	Closed
COM-2011-12-252	EP	17 December 2011	The Project Management Office of The Legend referred a resident's complaint about noise generated from Eastern Portal at about 7am.	The complainant was advised on the same day at 11:30am that all noisy construction works would only be carried out after 8:30am from Monday to Saturday starting from 17 Dec 2011.	Closed
COM-2011-12-255	EP	21 December 2011	The residents near Eastern Portal concerned about that the noise generated has recently become more severe, and the works started at around 8am which seems to be too early.	The noisy works will be carried out intermittently and would not be carried out before 8:30am. The Contractor is also studying the possibility of the use of chemical explosives instead mechanical breaking.	Closed
COM-2011-12-256	EP	29 December 2011	A resident of The Legend complained about the noise generated from Eastern Portal starting from 28 Dec 2011, and enquired about the completion date of all noisy works.	The complainant was advised on the same day at 1pm that the noisiest works would be completed before Chinese New Year and all construction works were scheduled for completion in mid 2012. He was also assured that all noisy works would be carried out intermittently to mitigate the noise nuisance to the nearby residents.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2012-01-257	EP	31 December 2011	The complainant complained about the noise nuisance to the residents nearby at Eastern Portal.	The complainant was advised that the Contractor has already implemented noise mitigation measures such as wrapping the breaker head and erecting the sound proof sheets. The Contractor is also studying the possibility of the use of chemical explosives instead mechanical breaking.	Closed
COM-2012-01-258	EP	9 January 2012	A resident near Eastern Portal complained about the noise generated from the site at about 8:15-8:20 am, and enquired when the construction works would be completed.	The complainant was assured that such work would not be carried out before 8:30 am and was told that the project would be completed mid-2012. She was also informed that the Contractor has erected sound proof sheets and been considering using alternative method to minimize noise.	Closed
COM-2012-01-263	EP	16 January 2012	The resident heard a non-stop pumping sound on 14 January night at 2.15 am. Although he closed all doors and windows, he still heard the regular ‘bump bump bump’ humming sound.	The complainant was advised that the ‘bump bump’ sound might be generated by the water pump within the site portion. She was informed that the pump will be switched off between 7pm to 7am of the next day to minimize the noise nuisance. The situation would be monitored closely by both RSS and the Contractor.	Closed

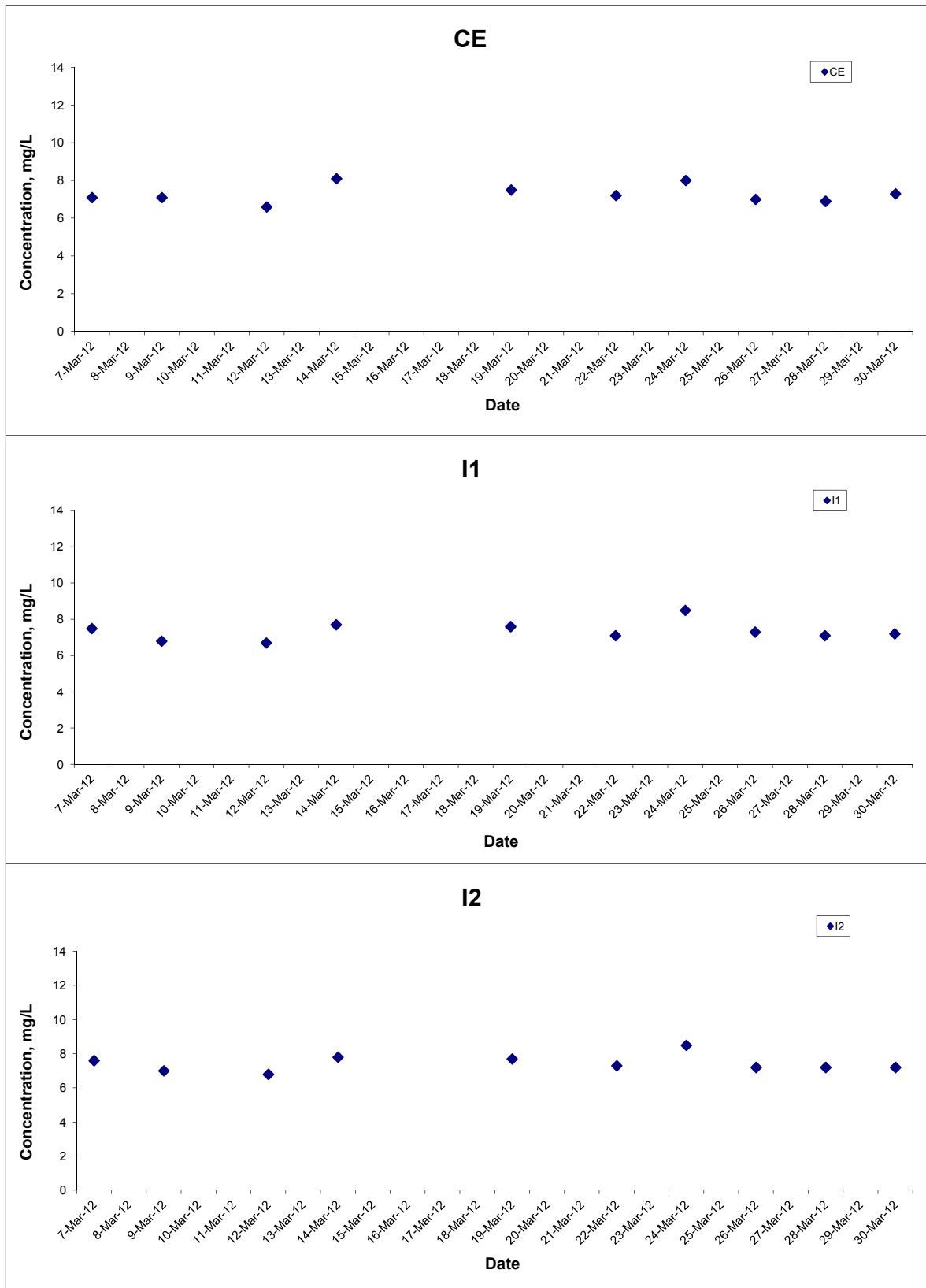
Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2012-01-267	EP	27 January 2012	A resident at the Legend complained about noise generated from Eastern Portal, which started from 7am until 5 or 6pm every day. The complainant also enquired about when the construction works would be completed.	She was assured that breaking works would not be started before 8am everyday and the Contractor would adopt the revised breaking method.	Closed
COM-2012-02-268	EP	3 February 2012	The complainant complained about a “woo woo” noise at 11pm on 2 Feb night. He suspected that the noise was generated from the electric motor at Eastern Portal and requested the Contractor to switch it off at night.	The complainant was advised that no works were carried out at night on 2 Feb. Moreover the water bump and all construction plants had been switched off. He was assured that the Contractor would closely monitor the situation.	Closed
COM-2012-02-273	PFLR1	6 February 2012	The complainant complained about the noise generated from intake PFLR1 inside Pokfulam Playground.	The complainant could not be reached at phone on three trials from 6-8 Feb.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2012-02-276	W8	13 February 2012	The complainant complained about the noise generated from construction works at intake W8 starting as early as 8am. He also enquired the completion date of works of the project.	The existing water pump has been installed with additional cover. The shaft opening has been covered by sound proof sheets. Additional noise panel was also constructed to screen the noise to be emitted to the neighbouring residential areas.	Closed
COM-2012-02-278	W8	17 February 2012	Residents at 80 Robinson Road complained about a continuous low frequency “woo woo” noise between 10pm to 4 am at midnight. Later, the “woo woo” sound was also heard on 18 Feb and on 20, 22 Feb during daytime.	On-site investigation was carried out by the Contractor and the RSS. Construction plants and activities were requested to stop to verify the noise. It was concluded that the noise was not generated from our construction site.	Closed
COM-2012-02-282	BR6	27 February 2012	Some members of Incorporated Owners of Ewan Court complained about a continuous noise (like from a running machine) from the construction site all over the night.	The complainant was advised that during night time, mainly adit lining works was performed and such work is scheduled to be completed in early May 2012. The opening of the dropshaft has also been covered by sound proof sheets to act as a noise barrier.	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2012-03-284	W8	5 March 2012	Residents at 80 Robinson Road complained about the mechanical noise nuisance in 24 hours from Intake W8.	Referring to the on-site investigations in February 2012, it was concluded that the continuous low frequency noise was not generated from our construction site. In addition, there was no heavy mechanical means in our construction site generating such noise. The complainants again agreed with the advice.	Closed
COM-2012-03-289	M3	26 March 2012	The complainant complained about the noise generated from the construction site on Saturday 24 March 2012.	The complainant was advised that the noise was generated by removal of concrete head wall at intake M3. To minimize noise nuisance, the Contractor has deferred to start the noisy work at 8:30 am every day. The removal works had been completed on 27 March 2012.	Closed

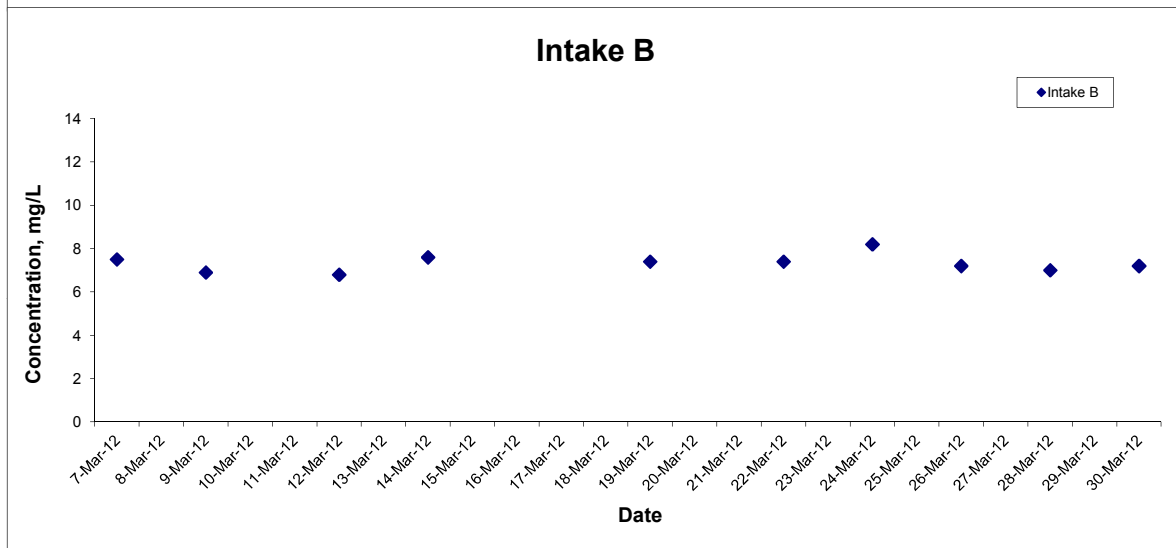
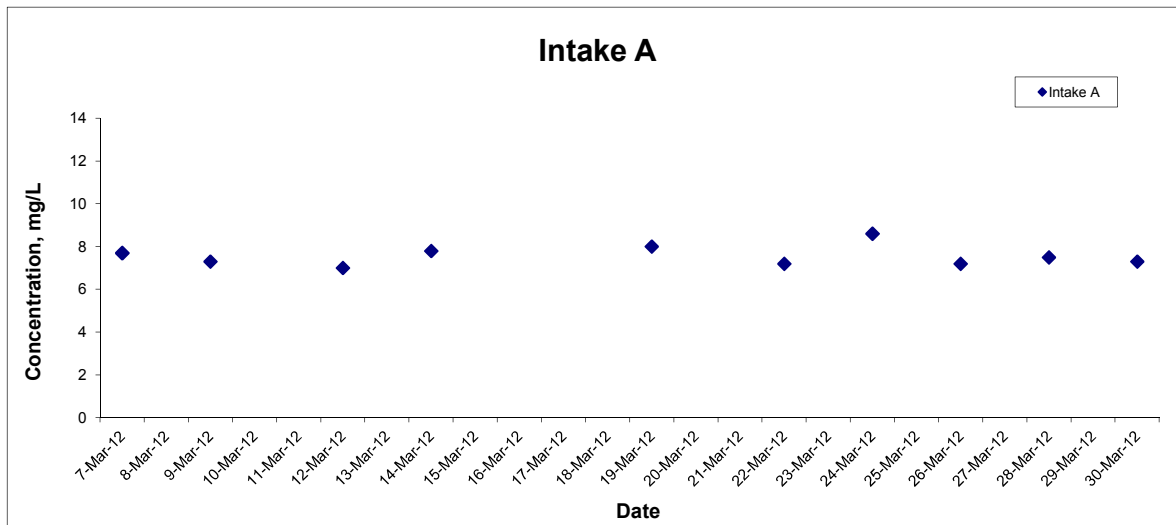
**APPENDIX L
GRAPHICAL PRESENTATION OF
WATER QUALITY MONITORING
RESULTS**

Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



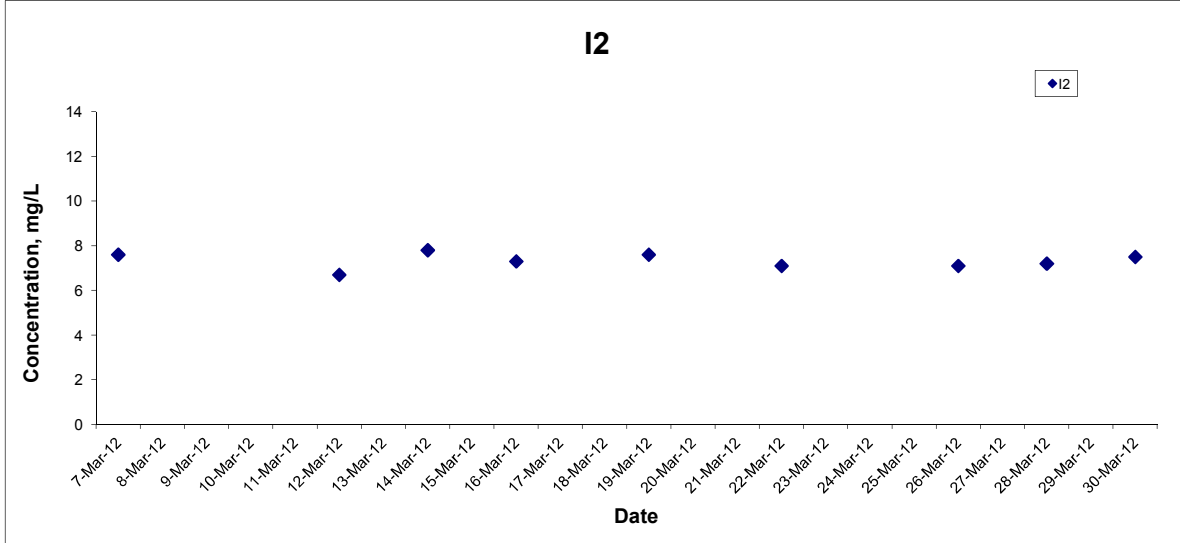
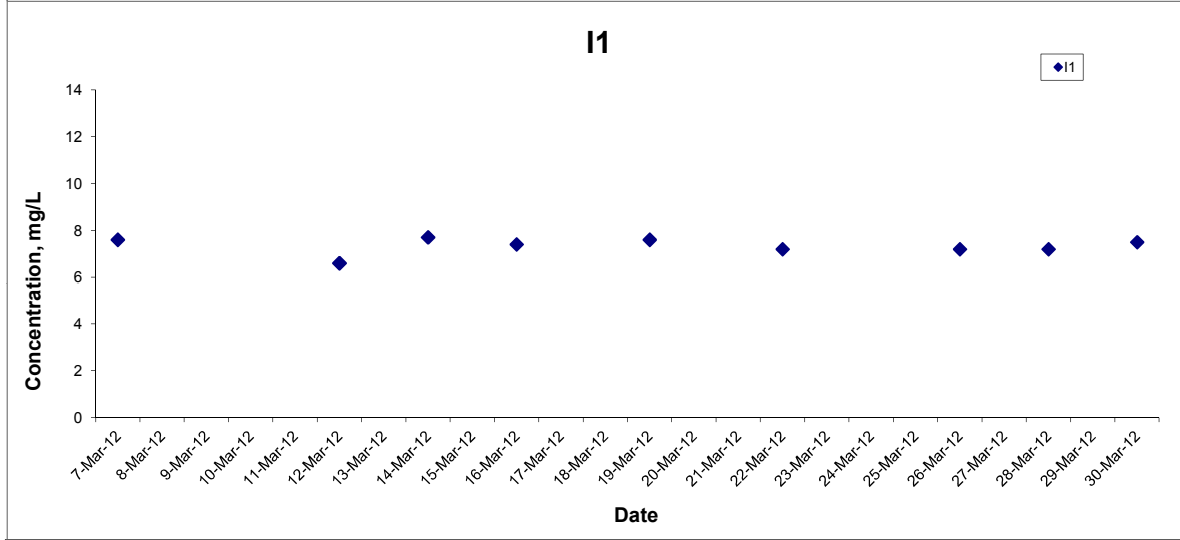
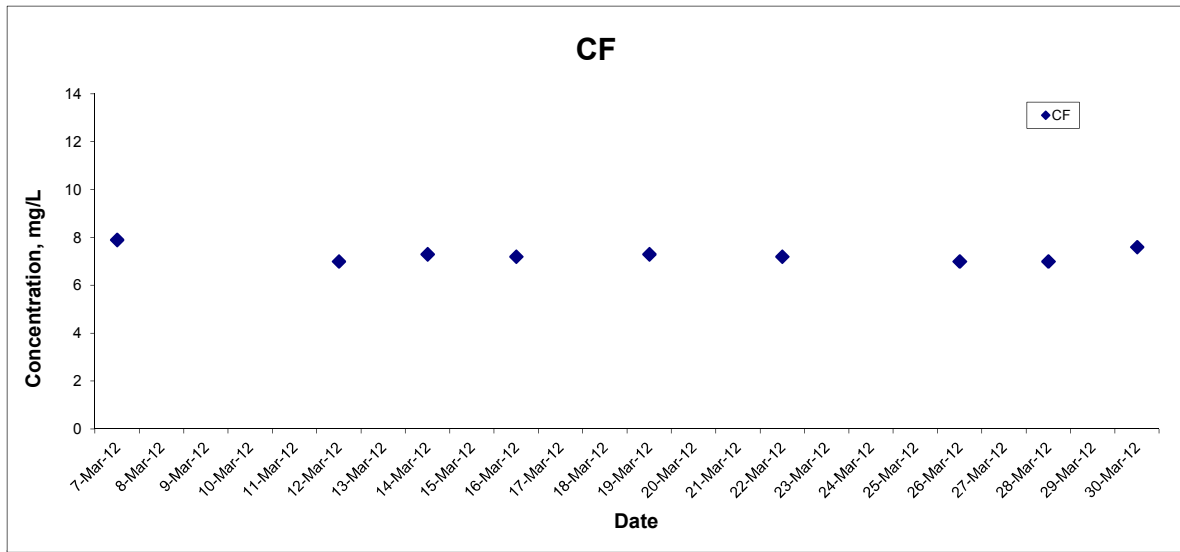
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Mar 12	Appendix L	

Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



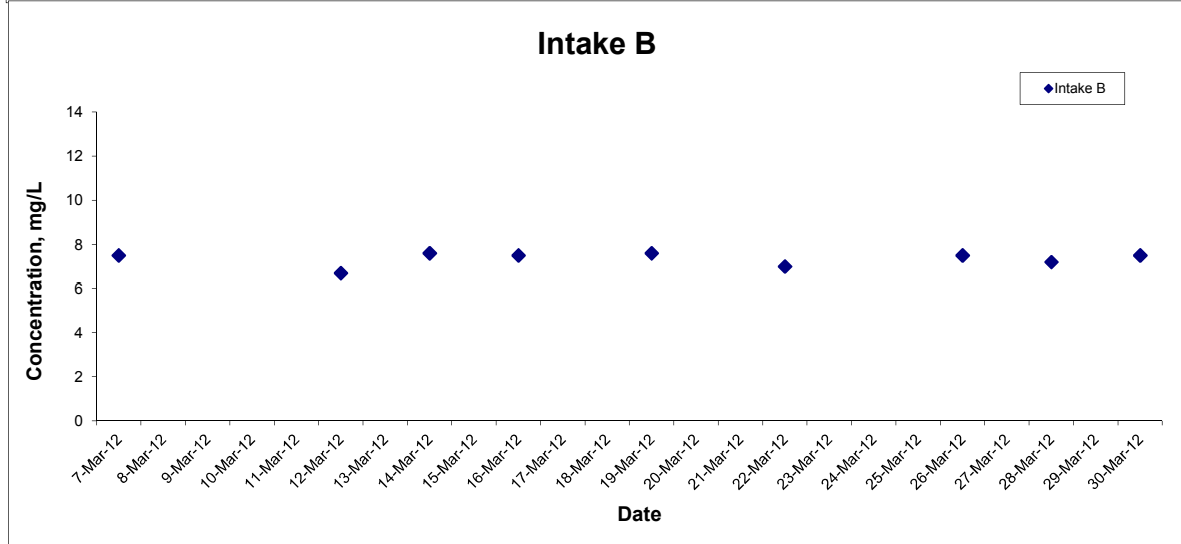
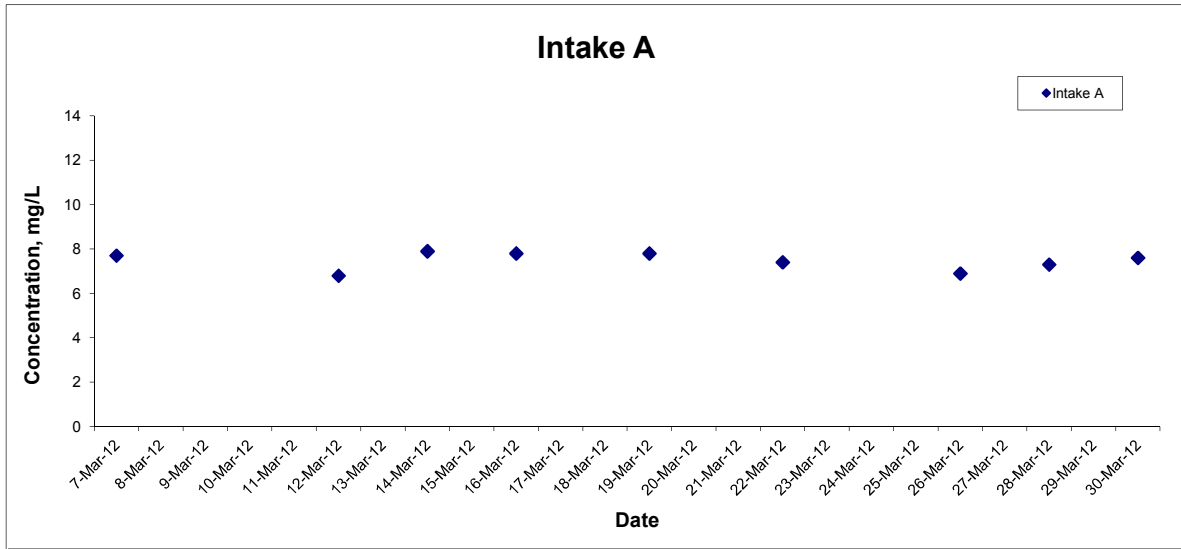
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	Date Mar 12	Appendix L	

Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



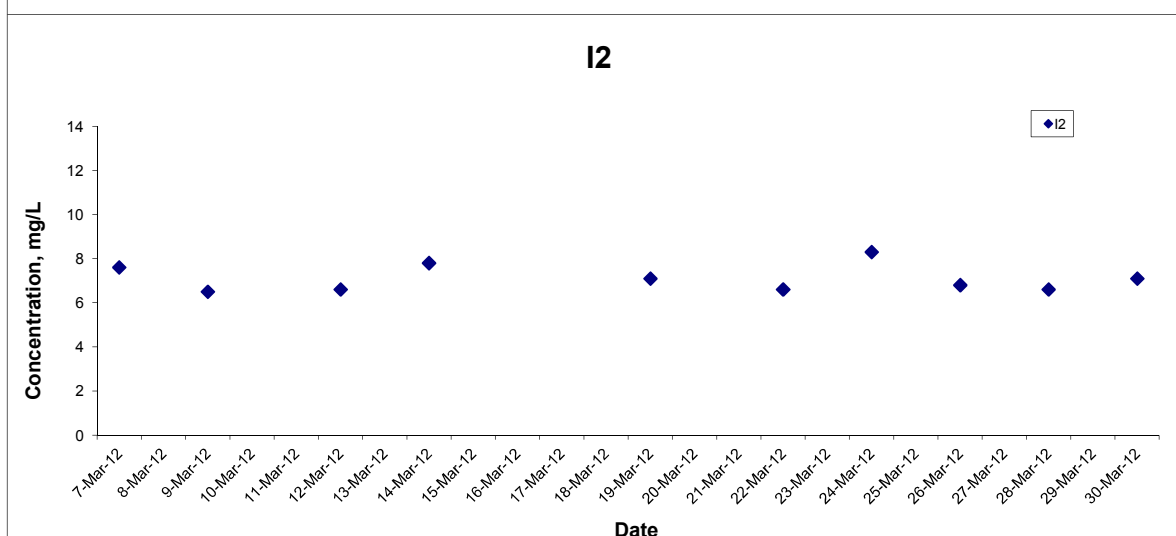
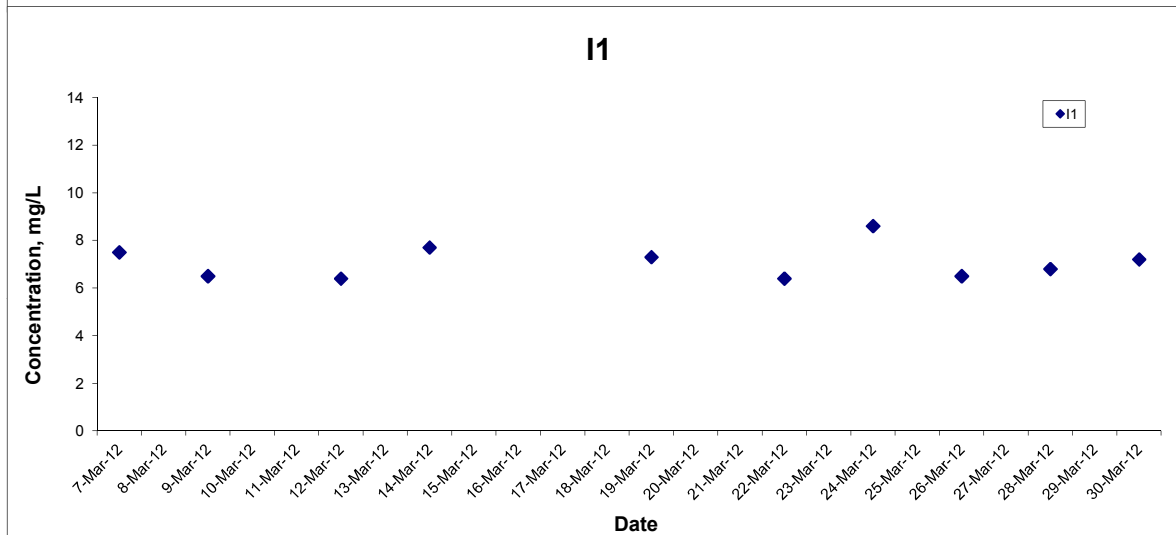
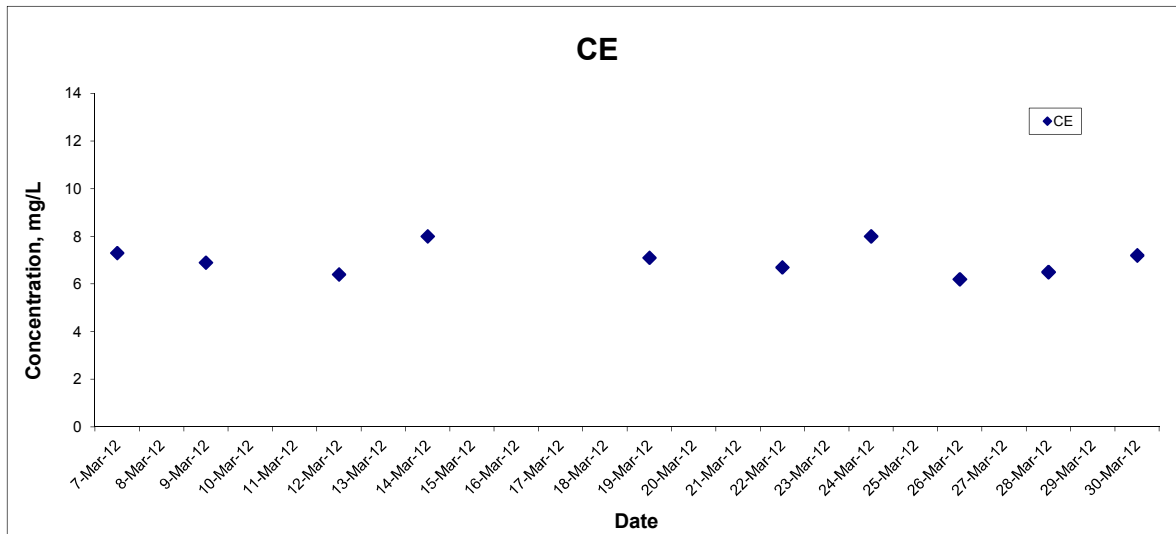
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale	N.T.S	Project No. MA8001	CINOTECH
	Date	Mar 12	Appendix L	

Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



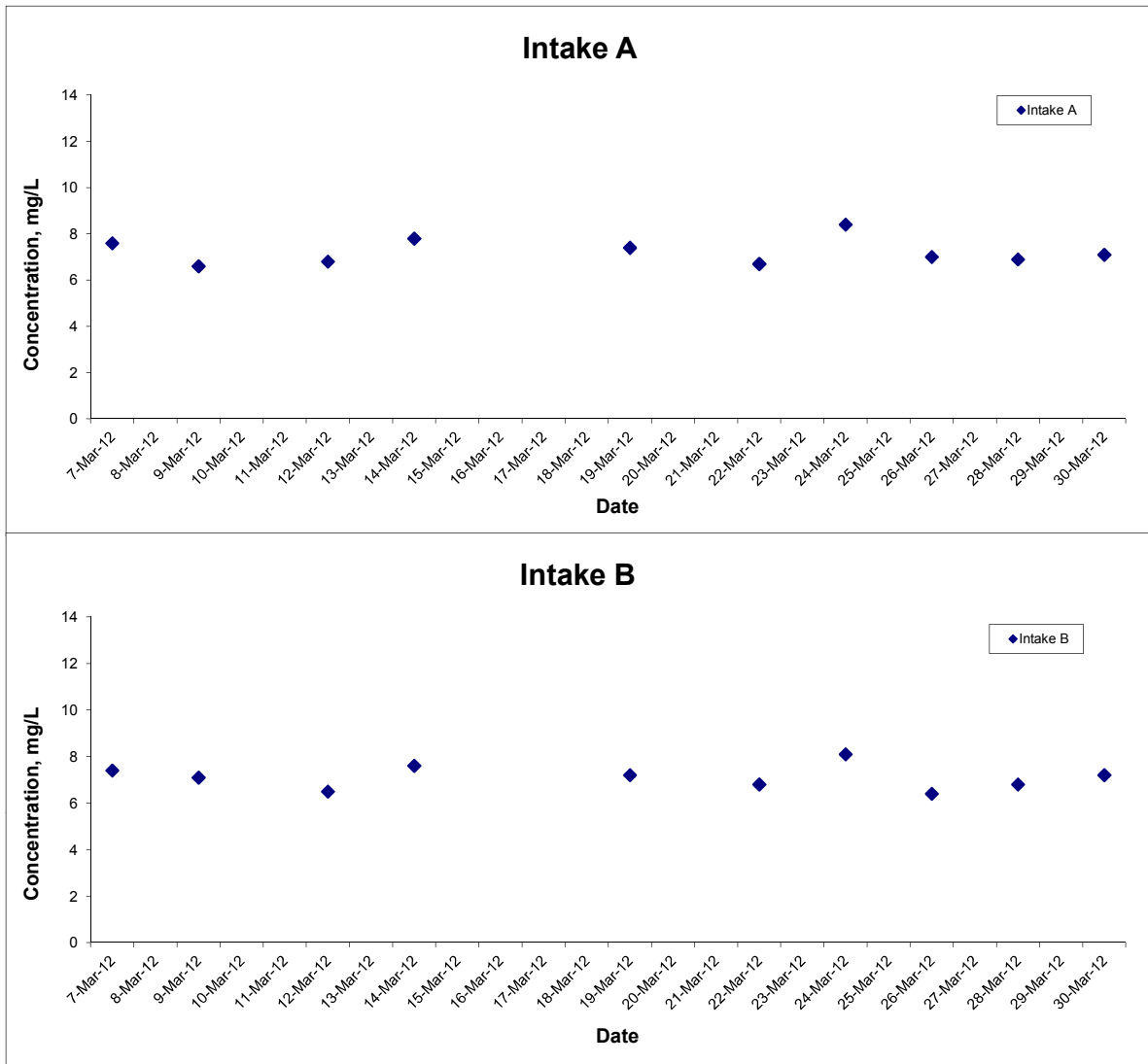
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	Date Mar 12	Appendix L	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



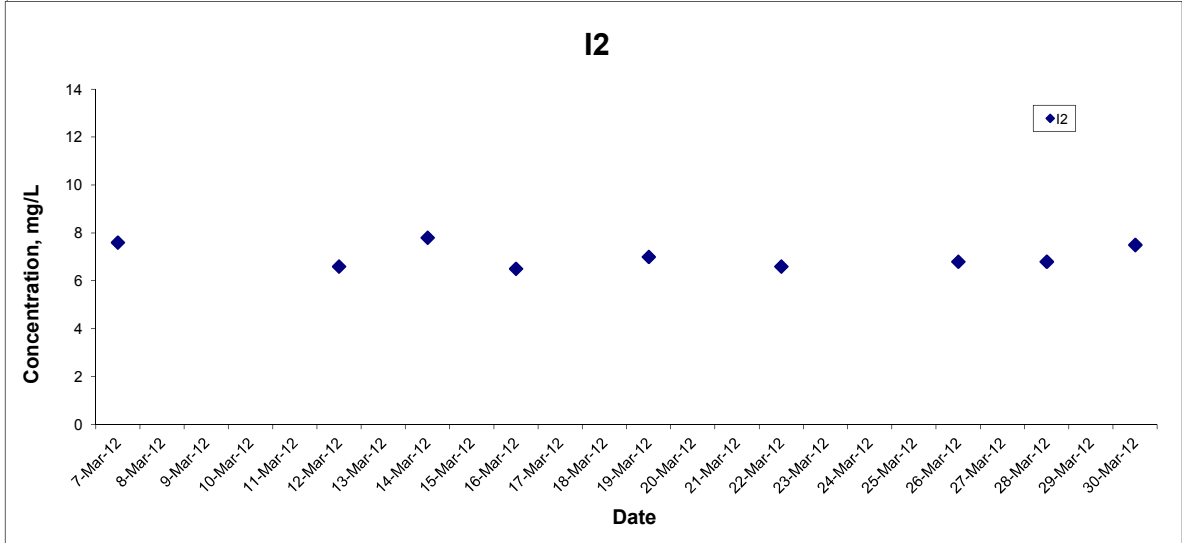
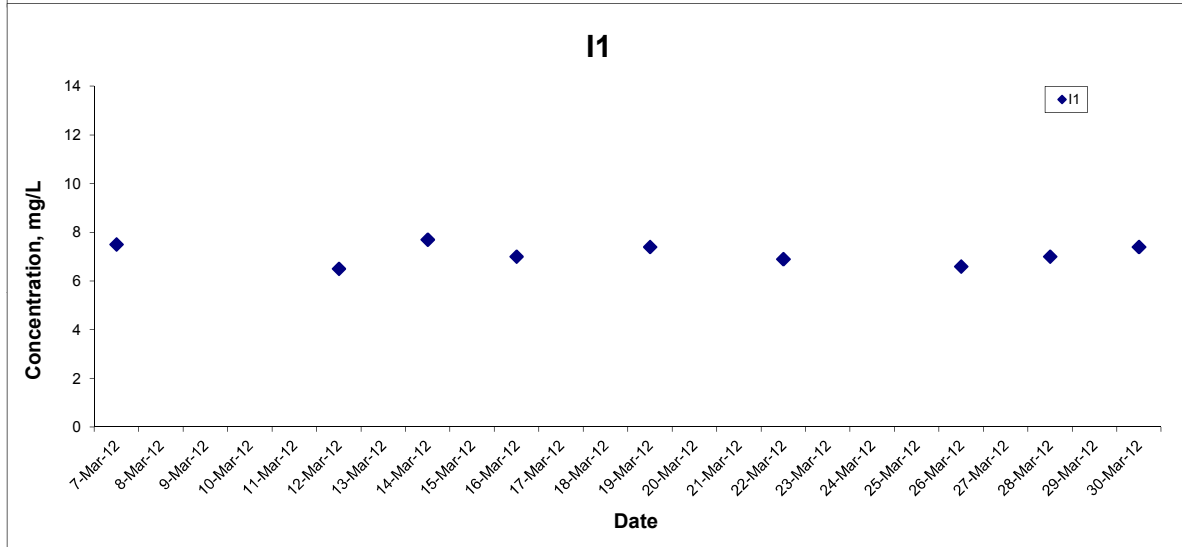
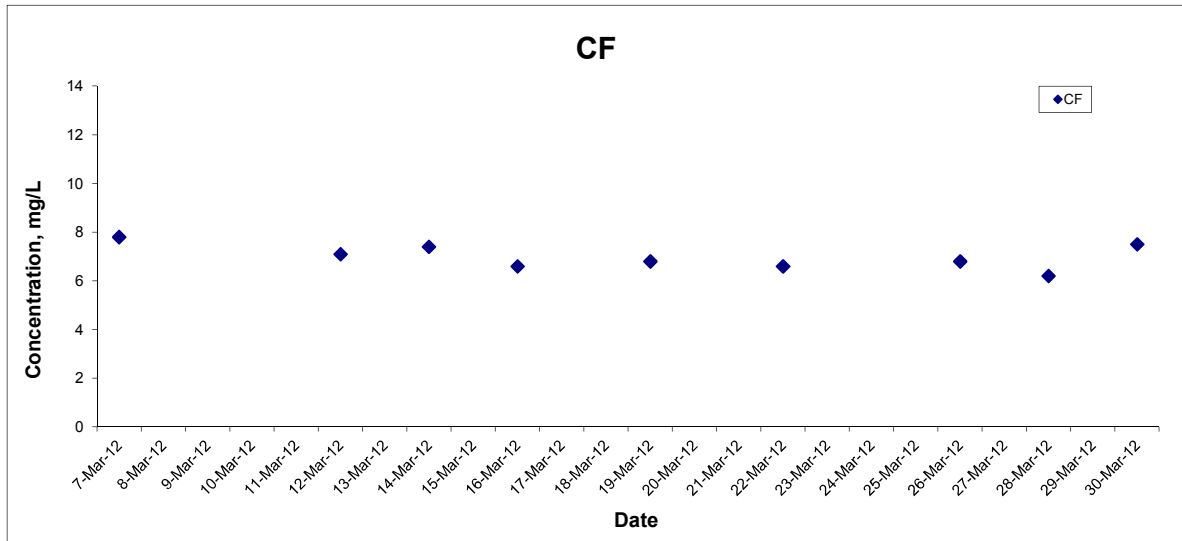
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
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Dissolved Oxygen (Bottom) at Mid-Ebb Tide



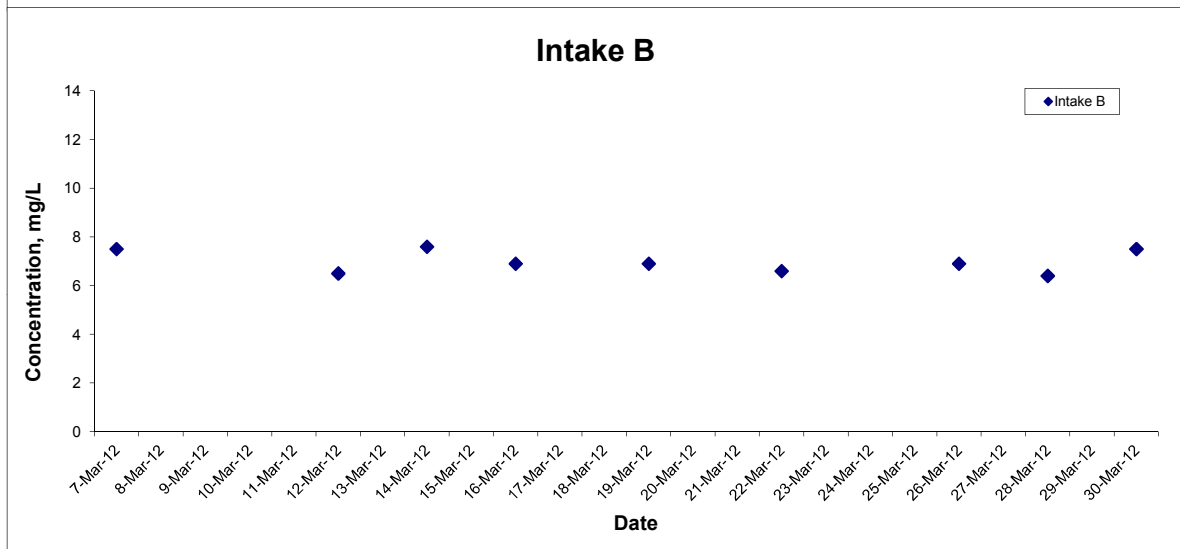
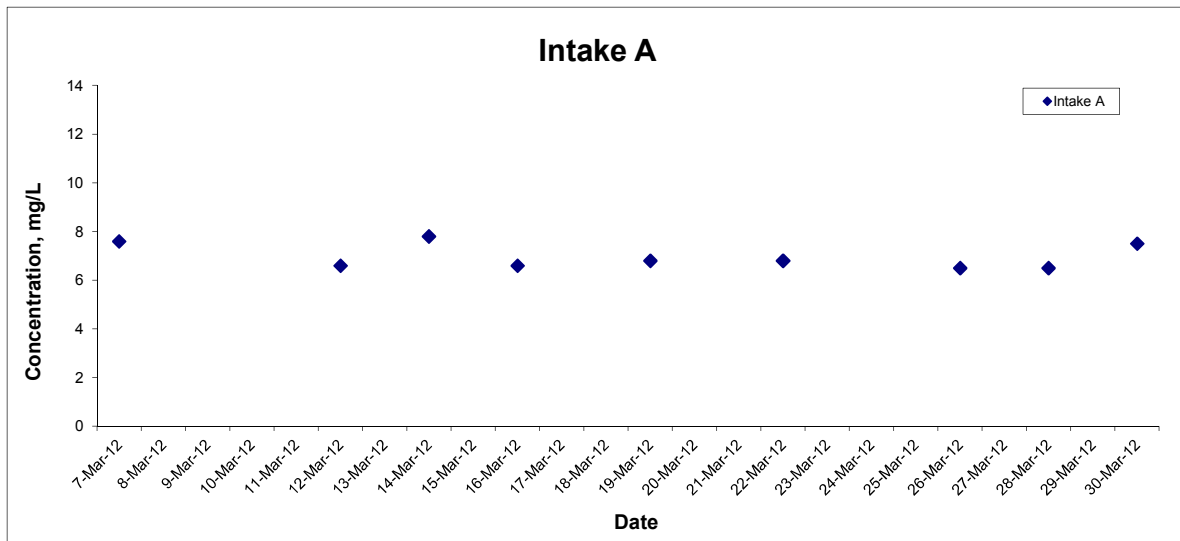
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
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Dissolved Oxygen (Bottom) at Mid-Flood Tide



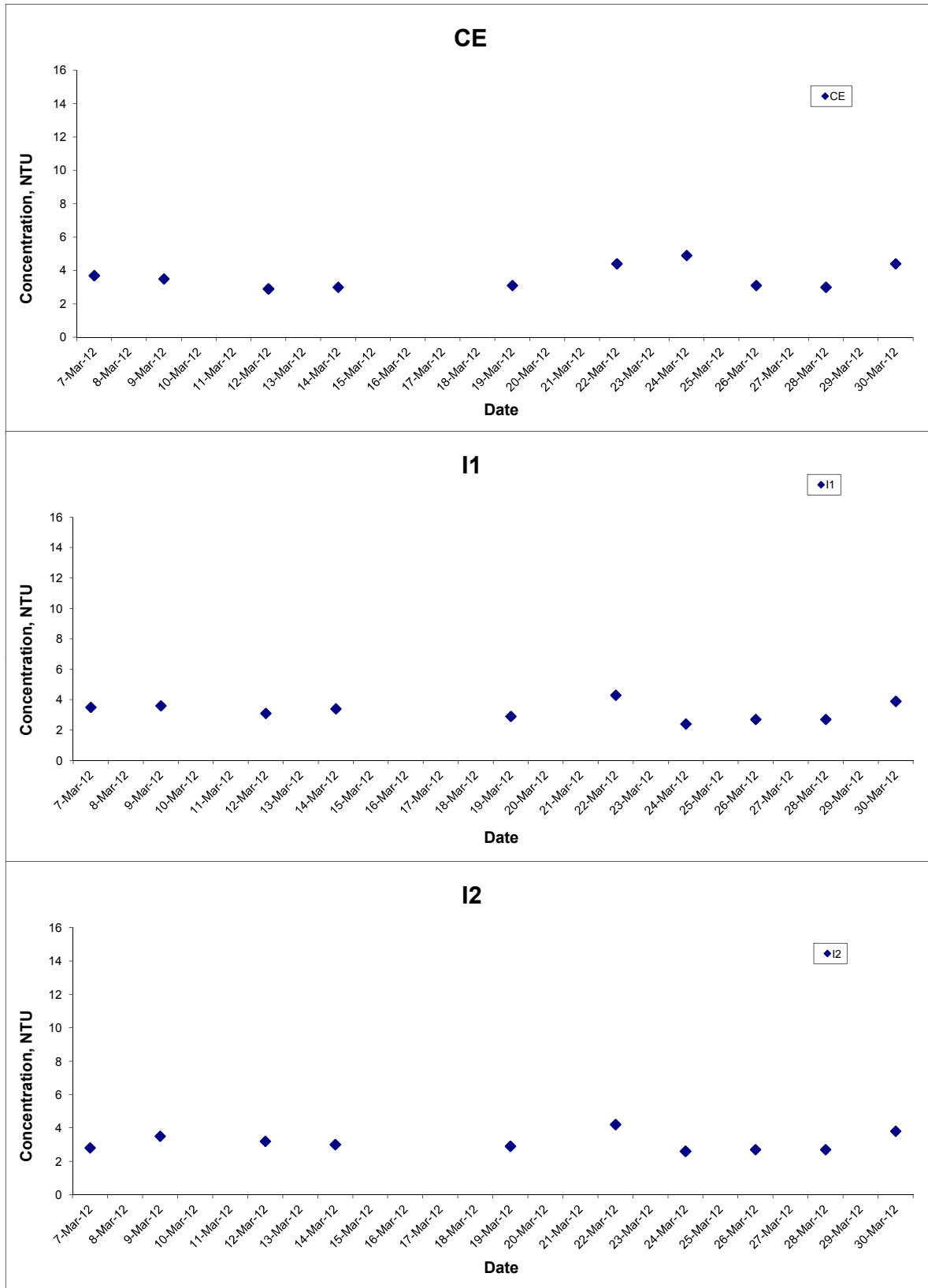
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Mar 12	Appendix L	

Dissolved Oxygen (Bottom) at Mid-Flood Tide



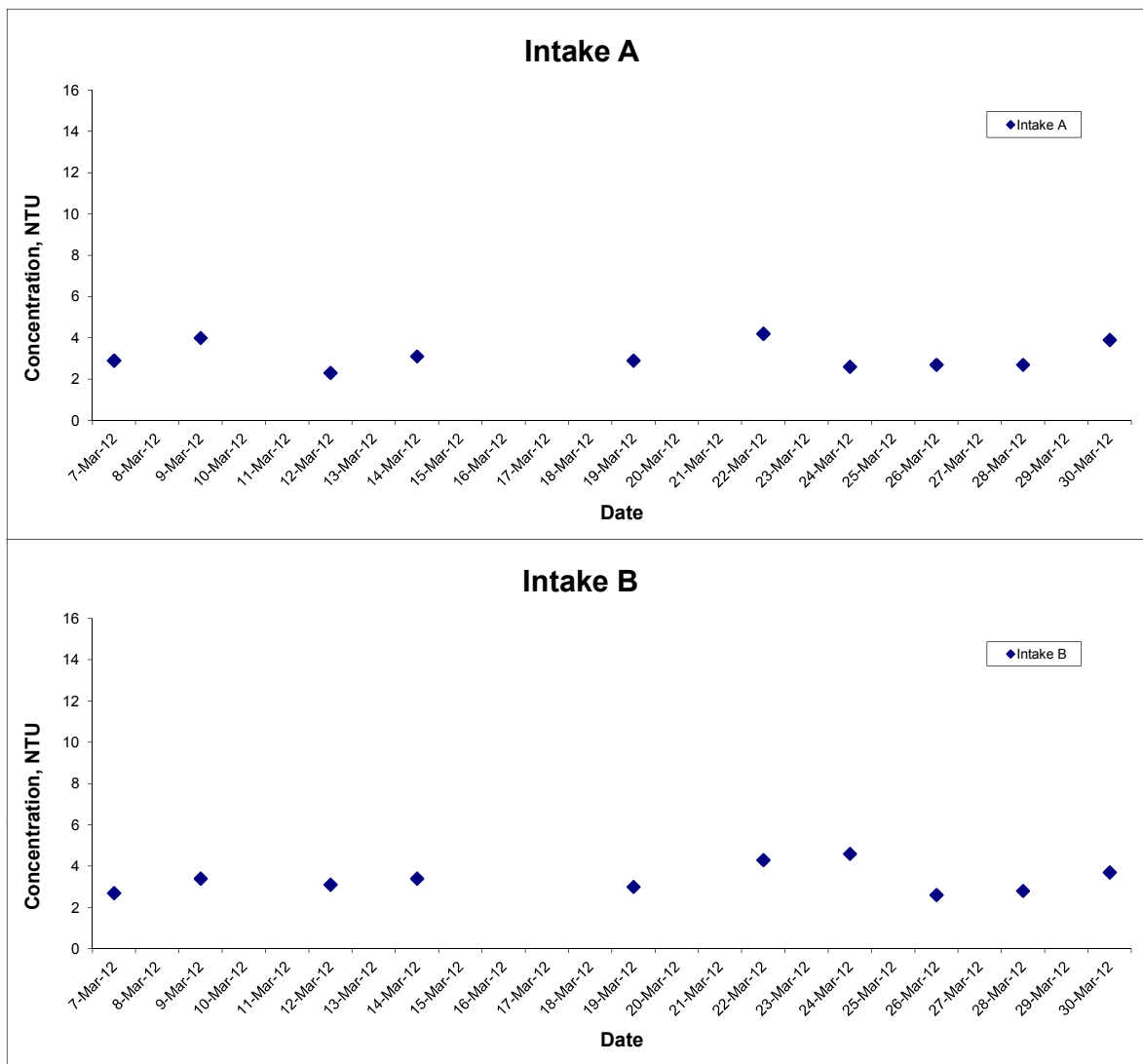
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
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Turbidity (Depth-averaged) at Mid-Ebb Tide



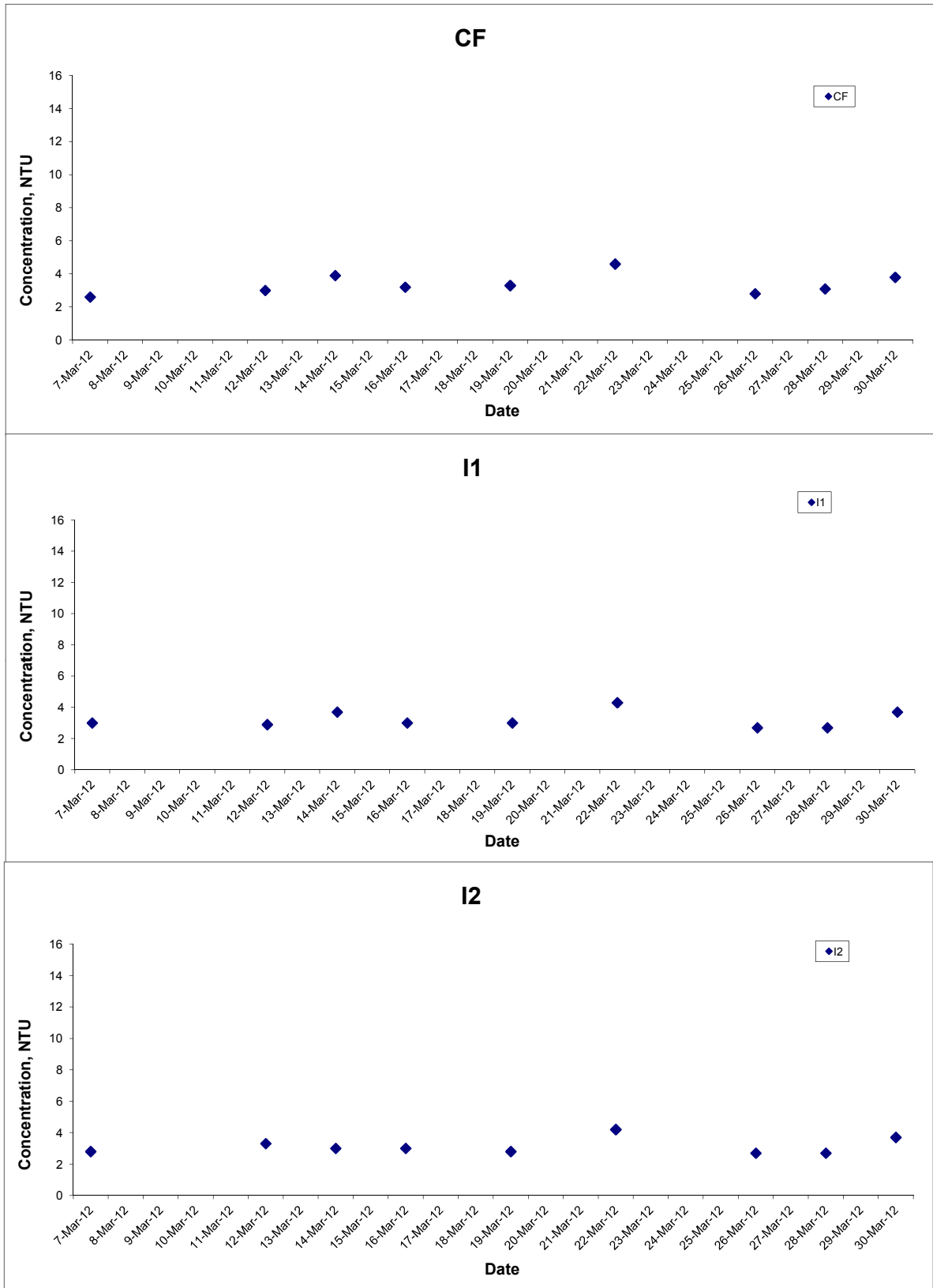
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
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Turbidity (Depth-averaged) at Mid-Ebb Tide



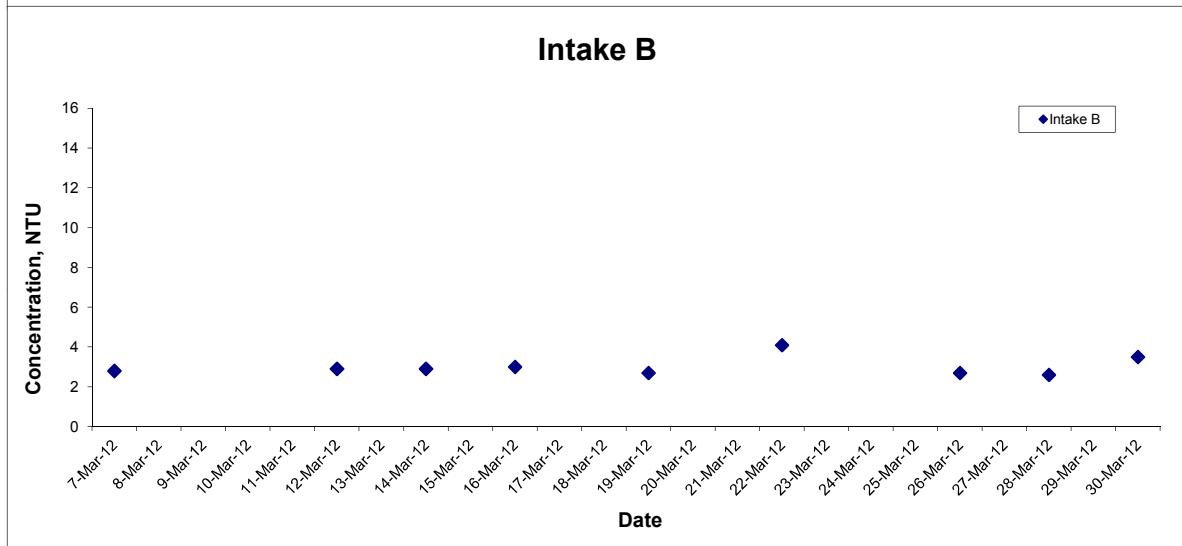
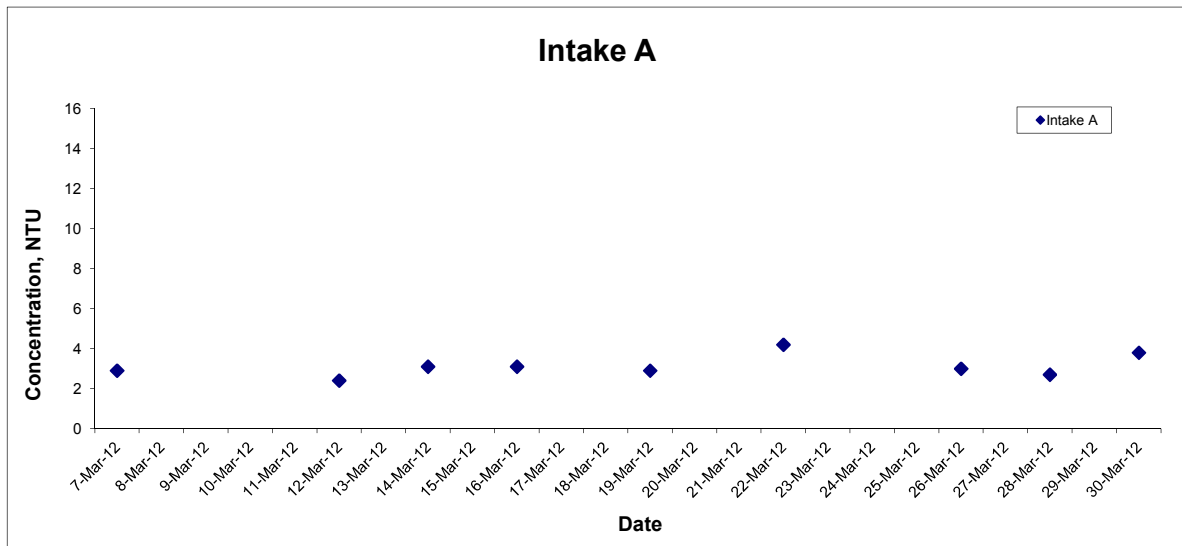
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
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Turbidity (Depth-averaged) at Mid-Flood Tide



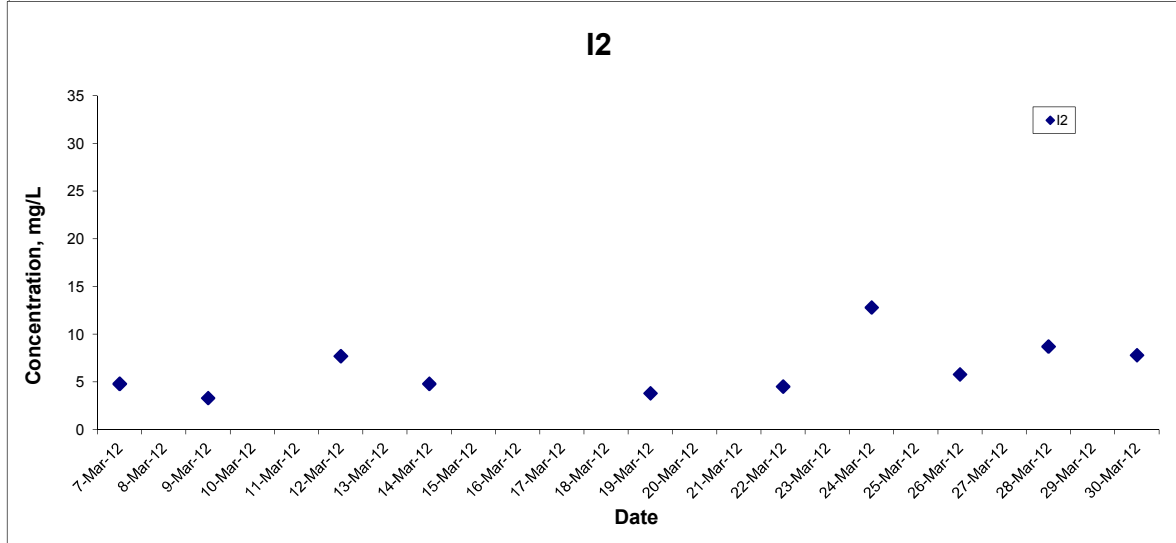
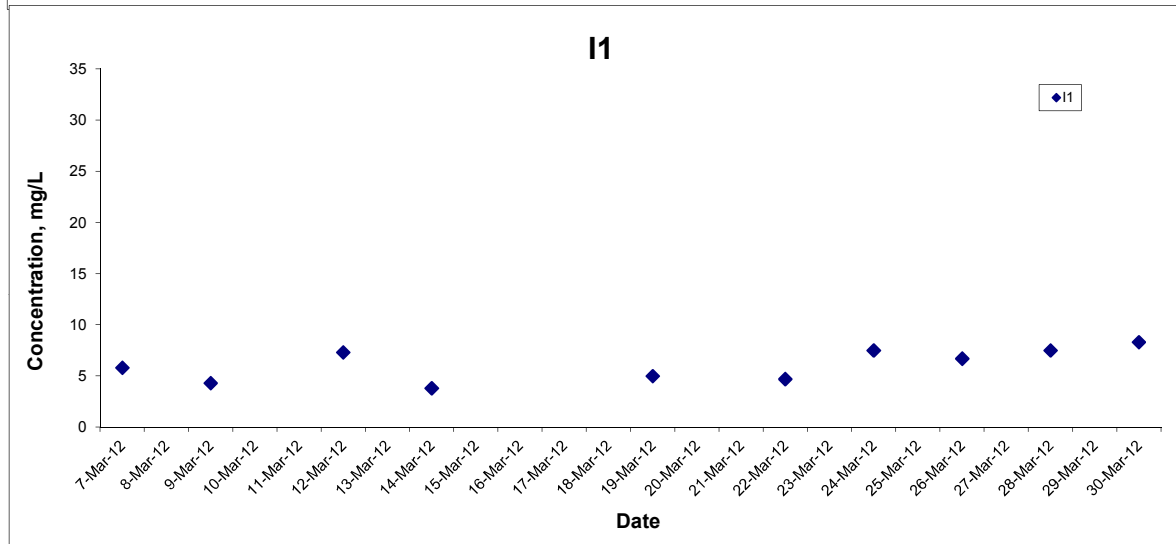
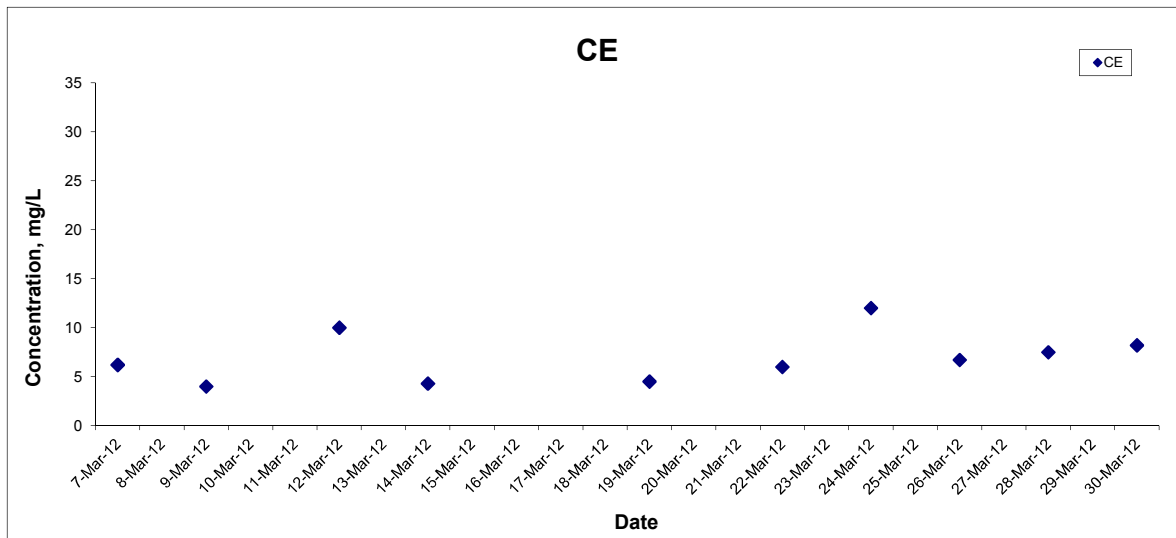
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale	N.T.S	Project No. MA8001	CINOTECH
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Turbidity (Depth-averaged) at Mid-Flood Tide



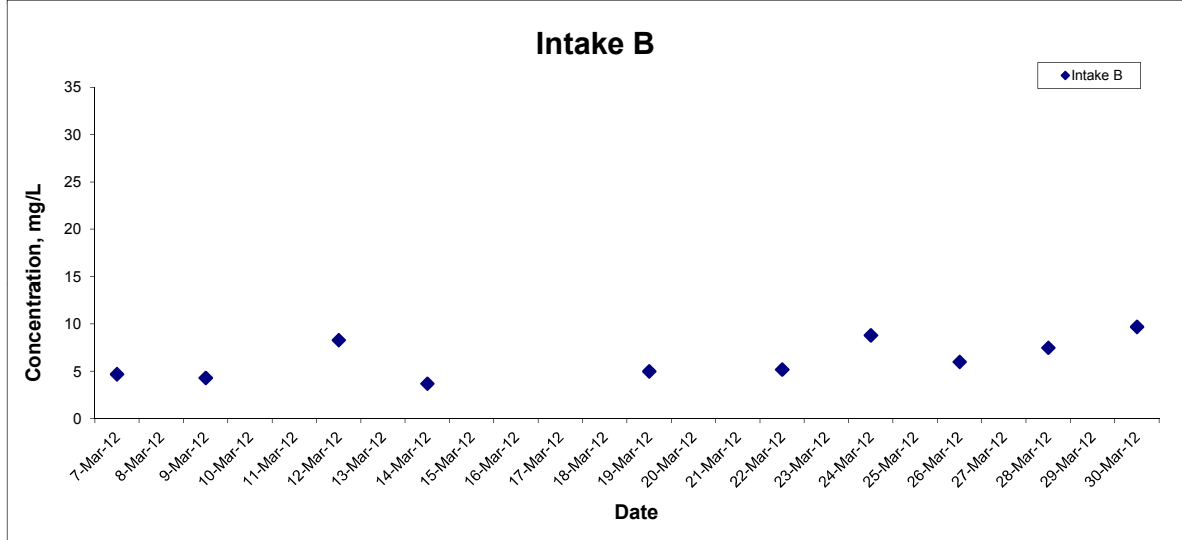
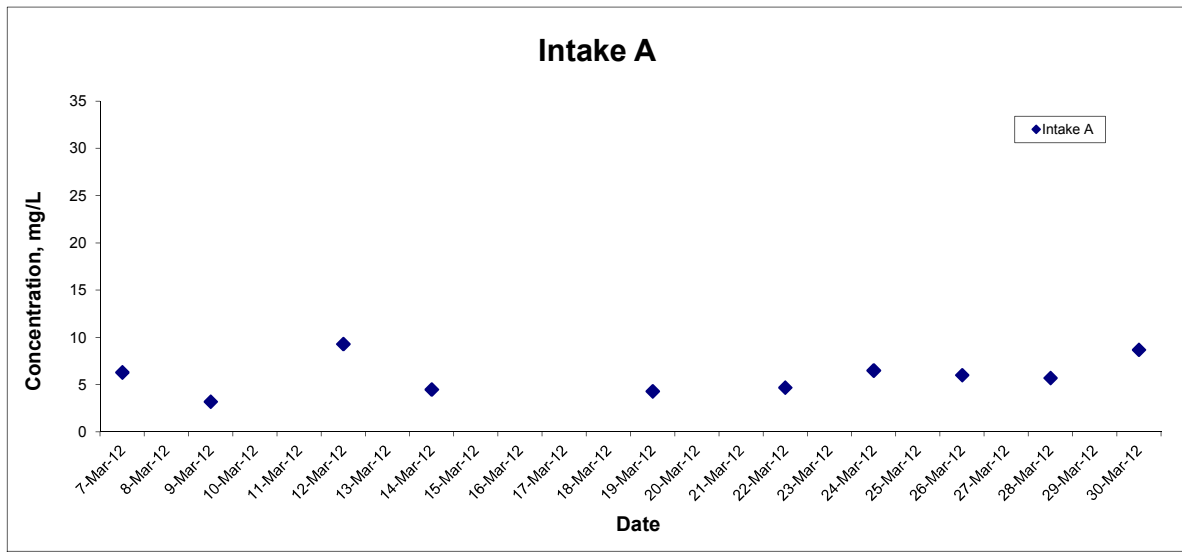
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	
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Suspended Solids (Depth-averaged) at Mid-Ebb Tide



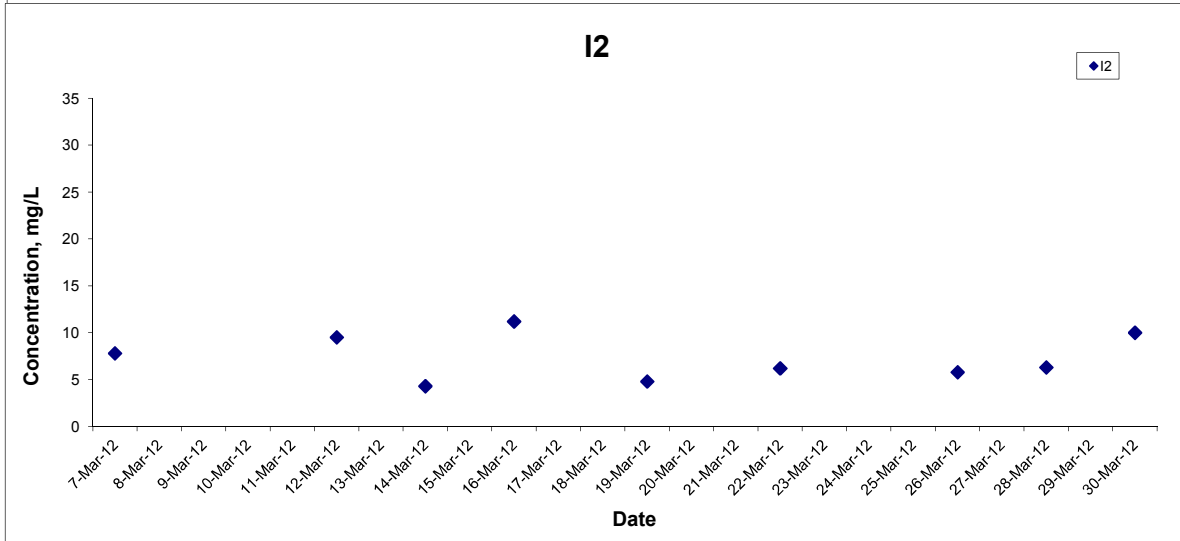
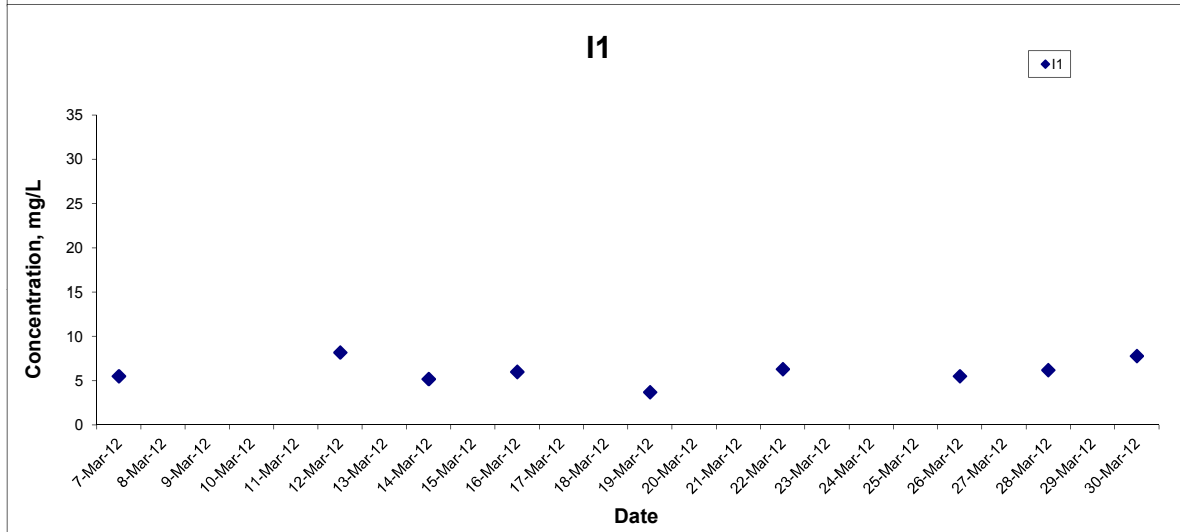
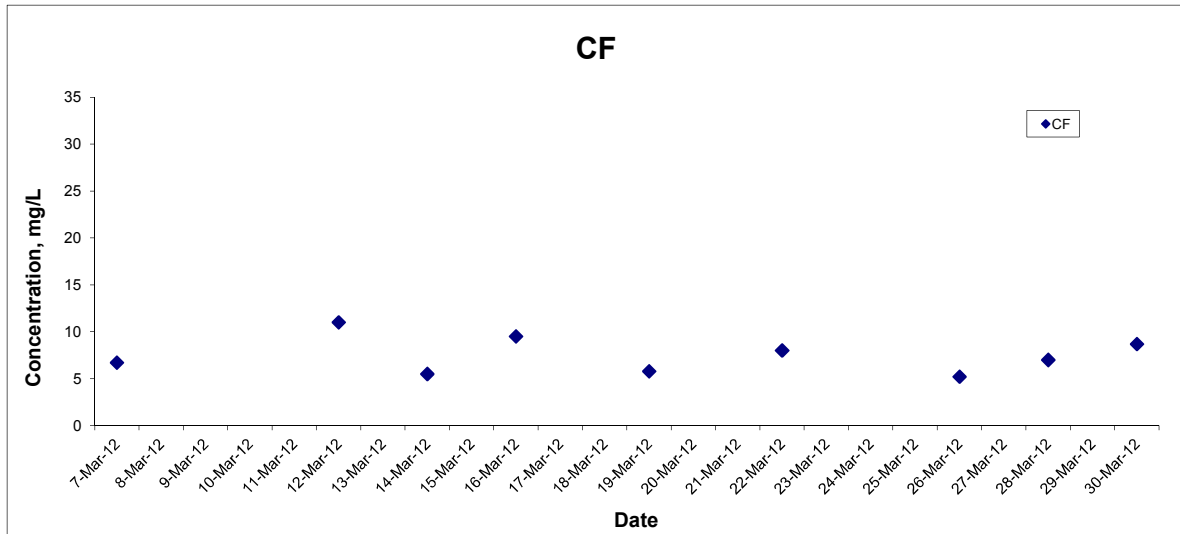
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale	N.T.S	Project No. MA8001	CINOTECH
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Suspended Solids (Depth-averaged) at Mid-Ebb Tide



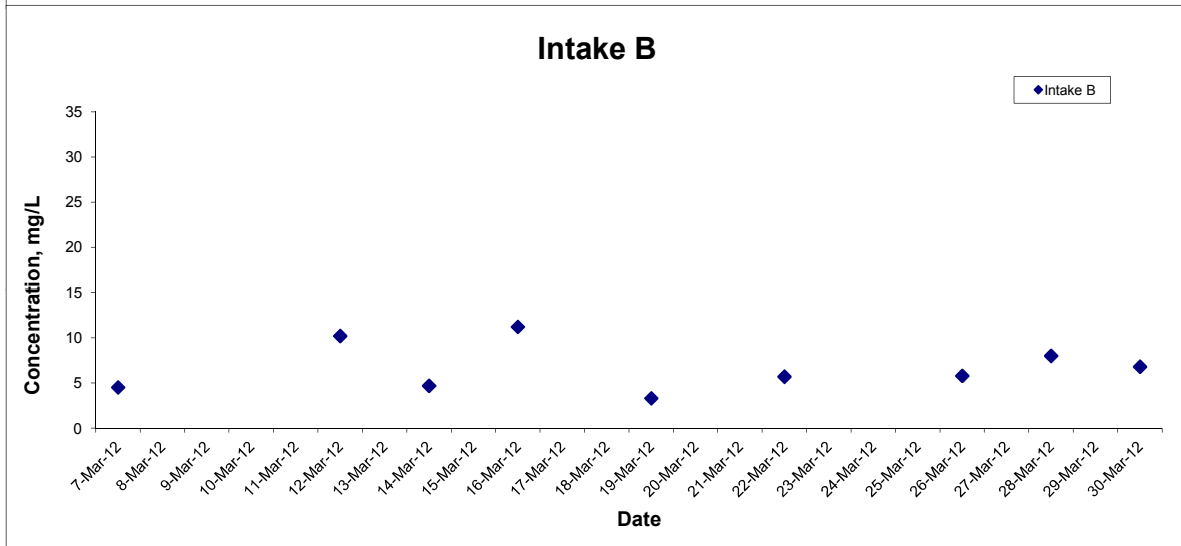
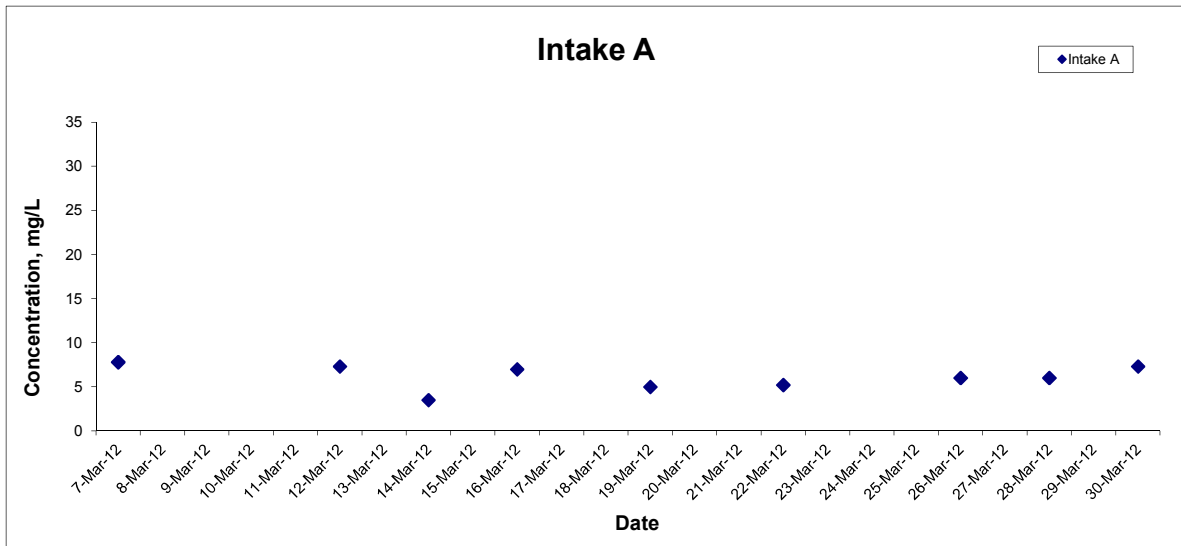
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
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Suspended Solids (Depth-averaged) at Mid-Flood Tide



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Suspended Solids (Depth-averaged) at Mid-Flood Tide



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