Dragages-Nishimatsu Joint Venture

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

Quarterly EM&A Report

(version 1.0)

July 2008 to September 2008

Approved 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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EXECUTIVE SUMMARY

Introduction

1. This is the 2nd 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 July and September 2008.

2. The construction activities undertaken in the reporting quarter were:

- Further establishment of project organization and staffing;
- Boulder stabilization, initial tunnel excavation and installation of temporary facilities at Eastern Portal;
- Erection of SOR's Site Offices, installation of temporary facilities, slope works, ELS works, marine works and horizontal pipe piling works at Western Portal;
- Installation of temporary facilities, slope works, shallow & deep excavation works, marine works and arch tunnel excavation at Western Portal;
- Utilities trial pits and additional ground investigation works at Intakes E7, DG1, MB16 and M3 in July, 10 out of 19 nos. Intakes in August and 10 nos. Intakes in September 2008;
- Approved in Principle (AIP) & Detailed Design Approval (DDA) submissions for temporary works at both portals, Intake W0 in July, 8 nos. Intakes in August and 16 nos. Intakes in September 2008;
- DDA submission for permanent works for Main Tunnel Precast Segmental Lining;
- AIP & DDA submissions for Pre-cast Segmental Lining at Adit Junction;
- Environmental impact monitoring; and
- TBM design and fabrication overseas.

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. 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				
July 2008				
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.
August 2008				
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.
September 2008				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	1	N.A.	N.A.
Western Portal				
July 2008				
1-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
Water Quality				
August 2008				
1-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
Water Quality	0	0	N.A.	N.A.
September 2008				
1-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
Water Quality	0	18	N.A.	N.A.

Air Quality

1-hour TSP Monitoring

5. 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

6. 24-hr TSP monitoring at 2 monitoring station, AQ1 and AQ3, was conducted as schedule in the reporting period except the monitoring at AQ1 and AQ3 on 6 August 2008 has been changed to 7 August 2008 due to the hoisting of Tropical Cyclone Warning Signals No.8. No Action/Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting quarter.

Construction Noise

7. Noise monitoring at 2 monitoring stations, NC1 and NC2, was conducted as schedule in the reporting period. One Action/Limit Level exceedance was recorded at NC1. The exceedance is considered due to the rock breaking works at Eastern Portal Site.

Water Quality

8. Water quality monitoring was conducted as schedule in the reporting period except the monitoring on 6 and 22 August 2008 due to the hoisting of Tropical Cyclone Warning Signals No.8 and No.9 respectively. Water Quality Monitoring was then re-scheduled to 7, 9 and 23 August 2008. Also, monitoring at mid-ebb tide on 24 September 2008 was cancelled due to the adverse weather. Eighteen Action/Limit Level exceedances were recorded in the reporting quarter. The exceedances are considered due to the natural fluctuations and also the adverse weather and natural algae but not due to the Project.

Environmental Licensing and Permitting

9. 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) was issued on 28 January 2008 to Dragages-Nishimatsu Joint Venture as the Permit Holder.

10. Registration of Chemical Waste Producer (License: 5213-148-D2393-02 for Eastern Portal and No. 5213-172-D2393-01 for Western Portal), Water Discharge License (License No.: EP860/W10/XY0175 for Area of Mount Butler Office, EP860/W10/XY0177 for Eastern Portal and EP820/W9/XT086 for Western Portal) and Construction Noise Permit (License No.: GW-RS0114-08 and GW-RS0612-08 for Eastern Portal and GW-RS0363-08 and GW-RS0611-08 for Western Portal)

Key Information in the Reporting Quarter

11. 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	1	Noise	Complaint investigation	Investigation report was submitted	Closed
Changes to the assumptions and key construction / operation activities recorded	0	---	N.A.	N.A.	---
Notifications of any summons & prosecutions received	0	---	N.A.	N.A.	---

Complaints and Prosecutions

12. One environmental complaint was received during the reporting quarter.

13. No warnings, summons and notifications of successful prosecution were received in the reporting period.

Future Key Issues

14. Key environmental issues at both Eastern and Western Portals in the coming month include:

Both Eastern and Western Portal

- Noise from operation of the equipment, especially for rock-breaking activities 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.

Only at Western Portal

- Contamination of marine water.

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) was issued on 28 January 2008 to Dragages-Nishimatsu Joint Venture as the Permit Holder. 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 2nd quarterly EM&A report summarizing the EM&A works for the Project in the period between July and September 2008.

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. Ted Tang	CRE	6117 6639	2436 1012
		Mr. Jackson Wong	SRE	6117 6636	
		Mr. Alan Ng	RE	9668 8350	
		Mr. Bernard Cheng	RE	98614939	
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. Claudine Lee	Independent Environmental Checker	2815 7028	2815 5399
DNJV	Contractor	Mr. Ben Ho	Environmental Officer	2671 7333	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-b, 4a-b and 5**. **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 G**.

4. MONITORING RESULTS

Weather Conditions

4.1 The weather during monitoring sessions was mainly sunny. 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 except the monitoring at AQ1 and AQ3 on 6 August 2008 has been changed to 7 August 2008 due to the hoisting of Tropical Cyclone Warning Signals No.8.. 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 Noise

4.5 Noise monitoring at 2 monitoring stations, NC1 and NC2, was conducted as schedule in the reporting period. One Action/Limit Level exceedance was recorded at NC1. The exceedance is considered due to the rock breaking works at Eastern Portal Site.

4.6 The graphical presentations of the noise monitoring results are shown in **Appendix E**.

Water Quality

4.7 Water quality monitoring was conducted as schedule in the reporting period except the monitoring on 6 and 22 August 2008 due to the hoisting of Tropical Cyclone Warning Signals No.8 and No.9 respectively. Water Quality Monitoring was then re-scheduled to 7, 9 and 23 August 2008. Also, monitoring at mid-ebb tide on 24 September 2008 was cancelled due to the adverse weather.

4.8 Eighteen Action/Limit Level exceedances were recorded in the reporting quarter. The exceedances are considered due to the natural fluctuations and also the adverse weather and natural algae but not due to the Project.

4.9 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			
July 2008					
DO (Surface and Middle)	0	0	N/A	N/A	N/A
DO(Bottom)	0	0			
Turbidity	0	0			
SS	0	0			
August 2008					
DO (Surface and Middle)	0	0	N/A	N/A	N/A
DO(Bottom)	0	0			
Turbidity	0	0			
SS	0	0			
September 2008					
DO (Surface and Middle)	0	0	N/A	N/A	N/A
DO(Bottom)	0	0			
Turbidity	0	0			
SS	0	18			

4.10 As reported in monthly report, all exceedances for water quality parameters recorded in the reporting quarter were not due to the Project. The rationales are detailed below:-

- ✧ The control station value *(Note1) already exceeded either the baseline action or limit Levels.
- ✧ Based on the field records, no non-compliance or mal-practice (such as plume) of marine construction activities was observed.
- ✧ No pollution discharge from construction activity was observed.
- ✧ Silt curtain deployed during the course of marine works.
- ✧ No construction activity was observed.

Note 1 – CE: Control Station (Ebb)
CF: Control Station (Flood)

4.11 As shown in the Graphical presentation, there is no significant difference in water quality during the reporting period. Those fluctuations are considered due to the natural variation.

4.12 The graphical presentations of the water quality monitoring results are shown in **Appendix F**.

Underground water level

4.13 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.

4.14 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. Monitoring data are shown in Table 4.2.

Table 4.2 Ground Water Level Monitoring Data at Location ADH48 in Reporting Quarter

Date	Water Level (from ground)/m
15 July 2008	7.30
26 July 2008	7.20
16 August 2008	7.50
29 August 2008	7.30
16 September 2008	7.87
25 September 2008	7.80

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 H**.

5.3 The major deficiencies identified by ET in the reporting quarter are summarized as follow:

Water Quality

- Standing water was observed at Eastern and Western Portals.
- Sediment was observed at the drainage channel at Western Portal.
- Worn sandbags were observed at both Eastern and Western Portals.
- Silty water was observed discharged out at both Eastern and Western Portals.
- Wastewater was observed discharged from the plant equipment at Intake MBD2.
- Excess material was observed from the decks at Western Portal.

Air Quality

- Stockpile of cement materials without covering was observed at Western Portal.
- Black smoke emission was observed from plants at Western Portal.

Waste/ Chemical Management

- Oil leakage was observed at both Eastern and Western Portals.
- Chemical waste was observed without suitable storage area at Eastern Portal.
- Discarded cement bags (abandon) was observed at Western Portal site.
- General refuse and vegetation debris were observed at Intake MBD2, M3 and MB16.
- Chemical container without drip tray was observed at Western Portal.
- Container with chemical oil was observed without cover at Eastern Portal.

Ecology

- Worn sand bags and silt was observed near the existing Steam at Eastern Portal.
- Opening of silt curtain was observed at Western Portal.
- Sediment accumulated at the access road at near the existing stream at Eastern Portal.

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

30th July 2008

Eastern Portal and Western Portal

- Worn-out sand bags were observed. More frequent maintenance is required.

Western Portal

- Water ponding was observed. Filling uneven surface is recommended.
- Silty water from slope and washing basin under elevated road was observed accumulating inside a concrete box. It is recommended that silty water should be treated before discharge.
- A stockpile of soil was not covered. Proper impervious sheets should be provided to cover the stockpile to avoid dust dispersion or washing away of soil to drains in rain.

Eastern Portal

- Bottom of hoarding near the site vehicle entrance was not sealed. Proper maintenance is required.

26th August 2008

Eastern Portal

- A pile of sand bags was placed near the slope along site access ramp. The area was silty. Prompt clean up and proper maintenance of sand bags are necessary.
- Wastewater from sedimentation system was silty. The Contractor was requested to check the water quality before discharge.
- Vegetation waste was holding by a bull dozer at site access ramp. Prompt removal of waste and skip for storage temporary are required.

MBD2

- No drip tray for chemical container was observed. The Contractor was rectified this immediately. However they should remind the workers the proper measures to prevent chemical spillage.
- Noise from water pump was noticed. The Contractor was rectified this immediately. However they should remind the workers on noise control measures regularly.

Western Portal

- Wastewater discharge from sedimentation tank for the treatment of surface runoff was silty. The Contractor was requested to check water quality before discharge. Concrete washing should be separated from surface runoff.
- A pile of cement bags was observed on site awaiting removal. As dust emission from cement bags is likely occurred, proper cover and prompt removal are recommended.
- Opening of silt curtain was observed. Regular checking is needed.

29th September 2008

Western Portal

- Bare ground was dry. More frequent watering the exposed surface and haul road is necessary.
- Stagnant water was observed holding in a drip tray of a generator and under equipment near the slope. Prompt removal of stagnant water is necessary and larvicide should be applied to avoid mosquito breeding.

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, installation and maintenance of silt curtain 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) was issued on 28 January 2008 to Dragages-Nishimatsu Joint Venture as the Permit Holder.

5.7 Registration of Chemical Waste Producer (License: 5213-148-D2393-02 for Eastern Portal and No. 5213-172-D2393-01 for Western Portal), Water Discharge License (License No.: EP860/W10/XY0175 for Area of Mount Butler Office, EP860/W10/XY0177 for Eastern Portal and EP820/W9/XT086 for Western Portal) and Construction Noise Permit (License No.: GW-RS0114-08 and GW-RS0612-08 for Eastern Portal and GW-RS0363-08 and GW-RS0611-08 for Western Portal)

5.8 The status of these licenses and permits obtained for the Project is summarized in **Appendix I**.

Status of Waste Management

5.9 The waste management of the Project has to follow the requirements and procedures stated in the Waste Management Plan which was prepared by the Contractor.

5.10 During this reporting quarter, a total 17 nos. of dump trucks of waste were delivered to SENT, 405 nos. of C&D waste was delivered to Public Fill Reception Facilities. Both the trip ticket system and chit accounting system for disposal of waste were operating smoothly to date. Three marginally overloading case was recorded during this reporting quarter, DNJV will closely monitor the disposal procedures to prevent the reoccurrence. 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.

5.11 The monthly summary of waste flow table for July – September 2008 are provided in **Appendix J**.

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 K**. 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 Noise

6.3 One Action/ Limit Level exceedance was recorded at NC1 in the reporting quarter.

Water Quality

6.4 A total of 18 Action/Limit Level exceedances of SS were recorded in the reporting quarter. The exceedances are considered due to the natural fluctuations but not due to the Project.

6.5 As reported in monthly report, all exceedances for water quality parameters recorded in the reporting quarter were not due to the Project. The rationales are detailed below:-

- ✧ The control station value *(Note1) already exceeded either the baseline action or limit Levels.
- ✧ Based on the field records, no non-compliance or mal-practice (such as plume) of marine construction activities was observed.
- ✧ No pollution discharge from construction activity was observed.
- ✧ Silt curtain deployed during the course of marine works.
- ✧ No construction activity was observed.

Note 1 – CE: Control Station (Ebb)
CF: Control Station (Flood)

6.6 As shown in the Graphical presentation, there is no significant difference in water quality during the reporting period. Those fluctuations are considered due to the natural variation.

Construction Impacts on Suspended Solids

6.7 The measured mean levels of suspended solid for impact monitoring stations during baseline monitoring and impact monitoring (this quarter) are summarized in Table 6.1a-b. Measured mean levels of SS at all Impact Stations of are well within 130% of mean value of Baseline data

Table 6.1a Summary of Measured levels of Suspended Solids at Mid-Ebb

Station No.	Measured Mean Level of Suspended Solids (mg/l)				Within 130% of mean value of Baseline data (Yes/No)	
	Baseline Impact Station	Baseline Control Station	Control Station (CE)	Impact Station	Control Station (CE)	Impact Station
			(July- Sept08)	(July- Sept08)	(July- Sept08)	(July- Sept08)
I1	11.7	12.3	9.7	8.4	Yes	Yes
I2	11.5			8.4		Yes
Intake A	10.2			9.0		Yes
Intake B	11.1			8.9		Yes

Table 6.1b Summary of Measured levels of Suspended Solids at Mid-Flood

Station No.	Measured Mean Level of Suspended Solids (mg/l)				Within 130% of mean value of Baseline data (Yes/No)	
	Baseline Impact Station	Baseline Control Station	Control Station (CF)	Impact Station	Control Station (CF)	Impact Station
			(July- Sept08)	(July- Sept08)	(July- Sept08)	(July- Sept08)
I1	11.6	11.7	9.1	8.9	Yes	Yes
I2	10.9			9.6		Yes
Intake A	11.0			9.0		Yes
Intake B	11.4			9.1		Yes

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

6.8 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 One environmental complaint was received during the reporting quarter. The updated Complaint Log is attached in **Appendix L**.

7.2 No warnings, summons and notifications of successful prosecutions were received in the reporting period.

7.3 There were a total of 3 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:

- Tunnel excavation works and intake cofferdam works at Eastern Portal;
- Shallow and deep excavation works, marine works and arch tunnel excavation works at Western Portal; and
- Utilities trial pits and additional ground investigation works at 15 nos. Intake sites.

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.

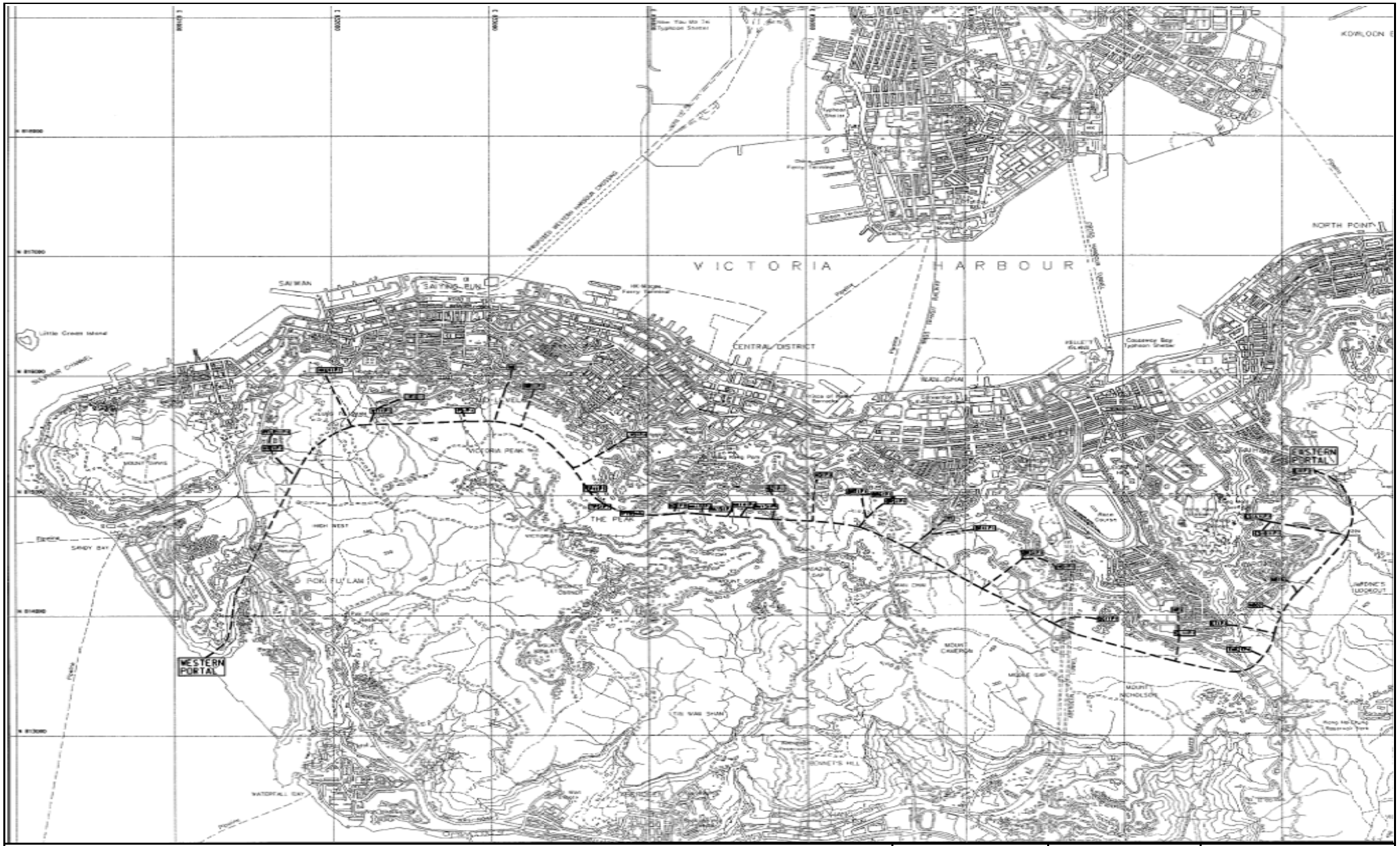
Water Quality Impact

- 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.

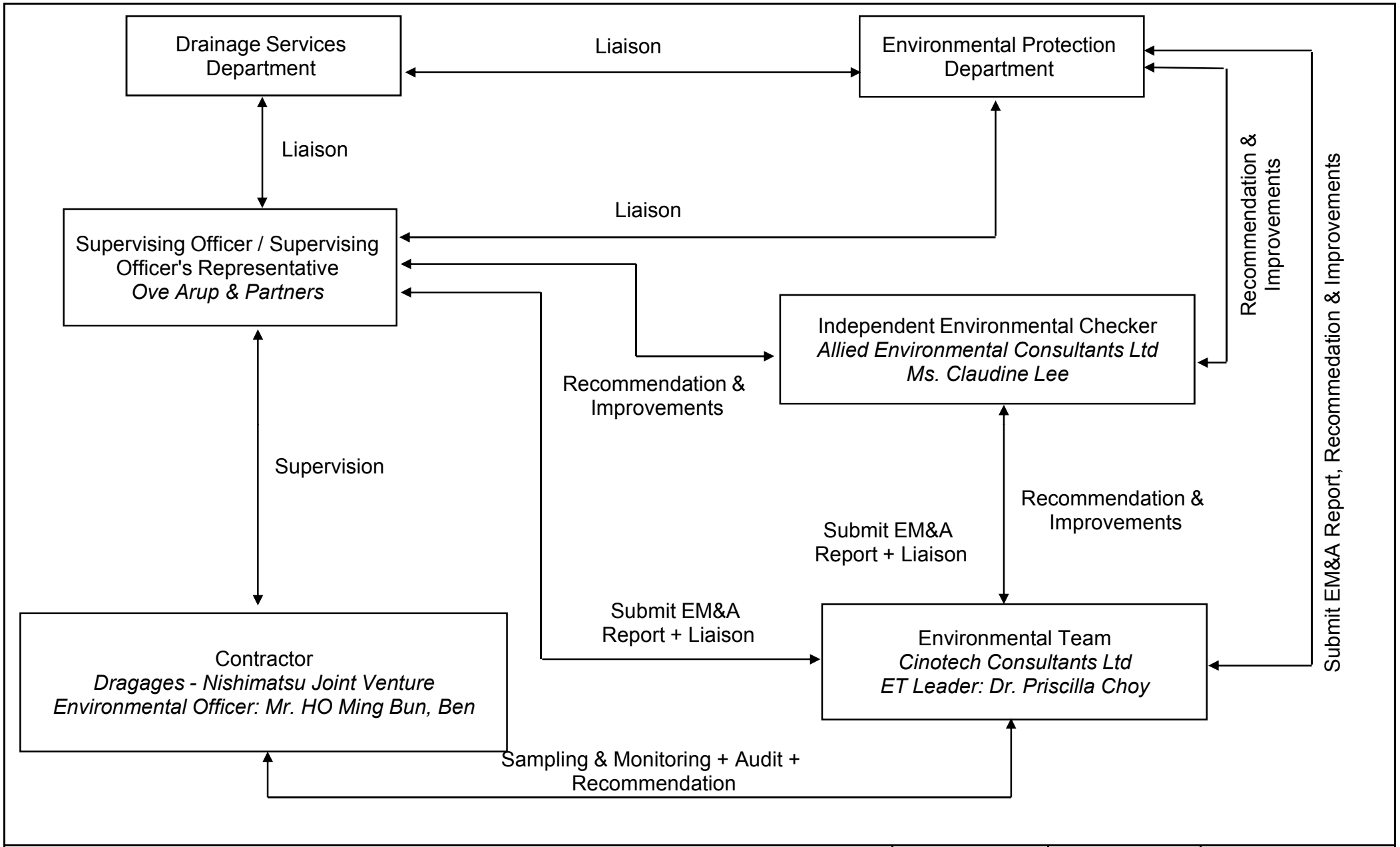
Waste/Chemical Management

- 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 Design and Construction of Hong Kong West Drainage Tunnel Site Layout Plan	Scale: N.T.S	Project No. MA8001	CINOTECH
	Date: Jun-08	Figure: 1	



Title: Project Organization Chart	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel	Scale: N.T.S Date: Jun-08	Project No.: MA8001 Figure: 2

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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: Jul-08	Project No.: MA8001 Figure: 3a

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Title

Contract No. DC/2007/10

Design and Construction of Hong Kong West Drainage Tunnel

(Western Portal)

Locations of Air Quality and Noise Monitoring Station

Scale	N.T.S
Project No.	MA8001
Date	Jul-08
Figure	3b

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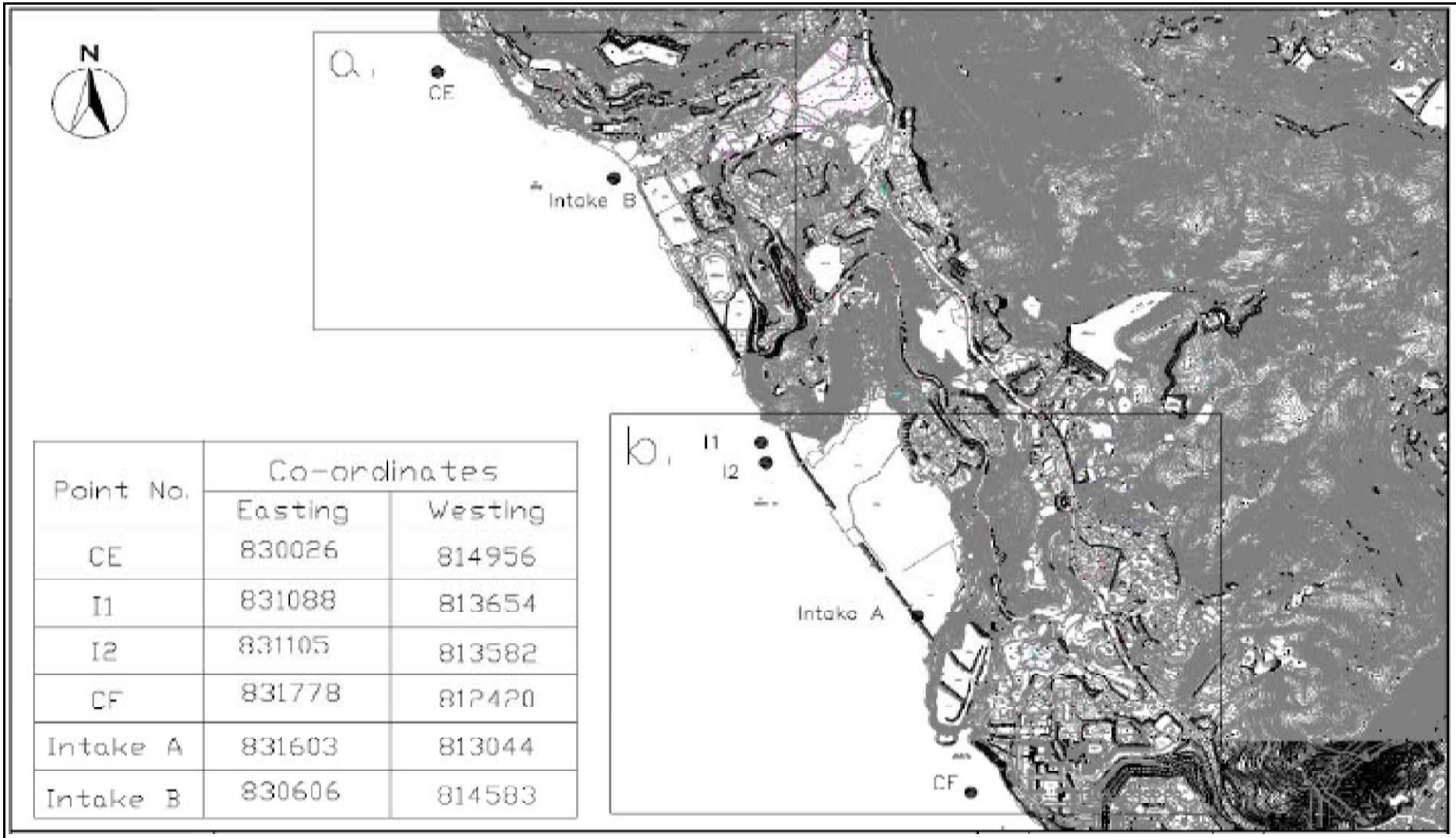
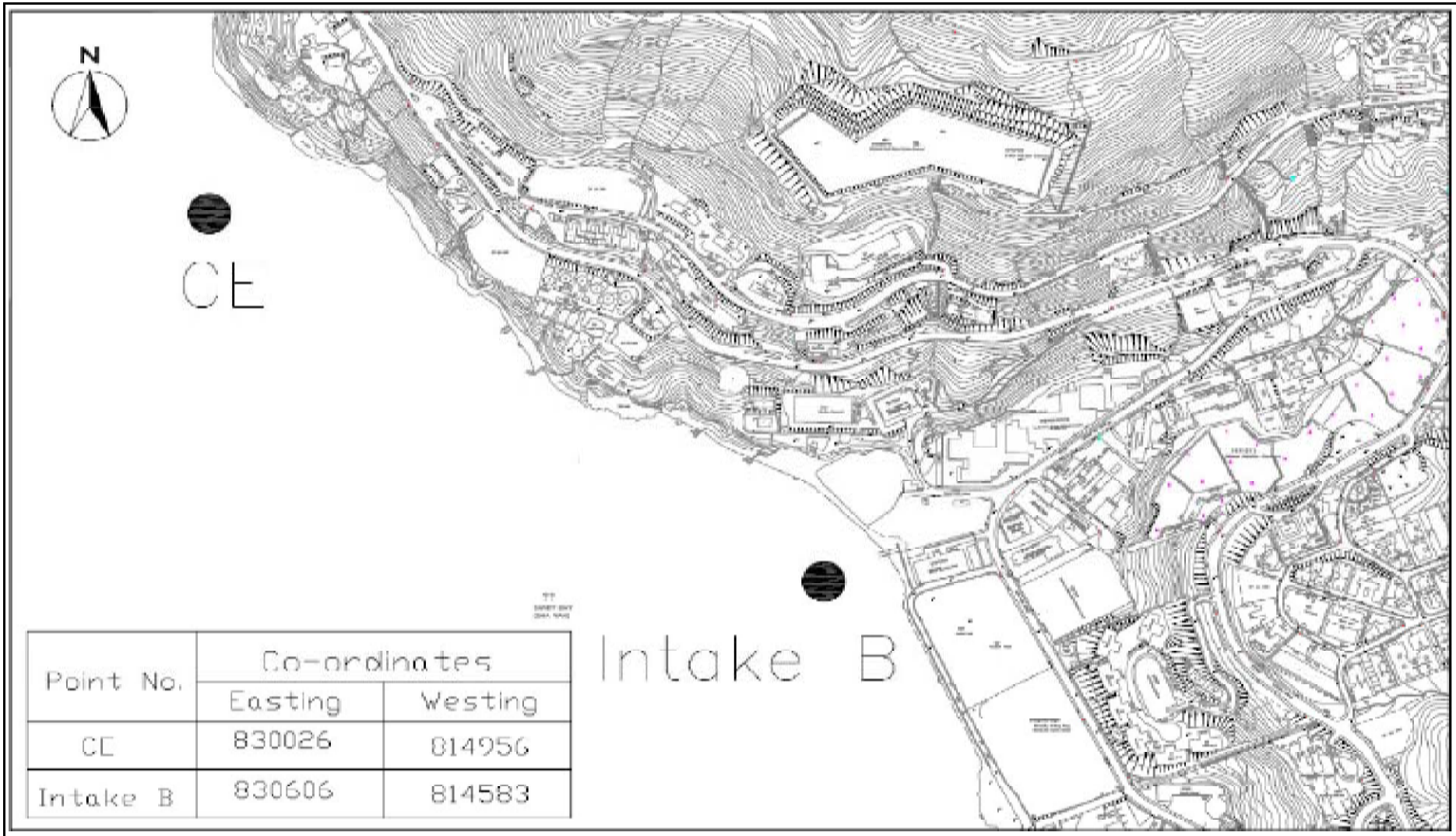


Point No.	Co-ordinates	
	Easting	Westing
CE	830026	814956
I1	831088	813654
I2	831105	813582
CF	831778	812420
Intake A	831603	813044
Intake B	830606	814583

Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Locations of Water Quality Monitoring Stations	Scale: N.T.S Date: Jul-08	project No.: MA8001 Figure: 4

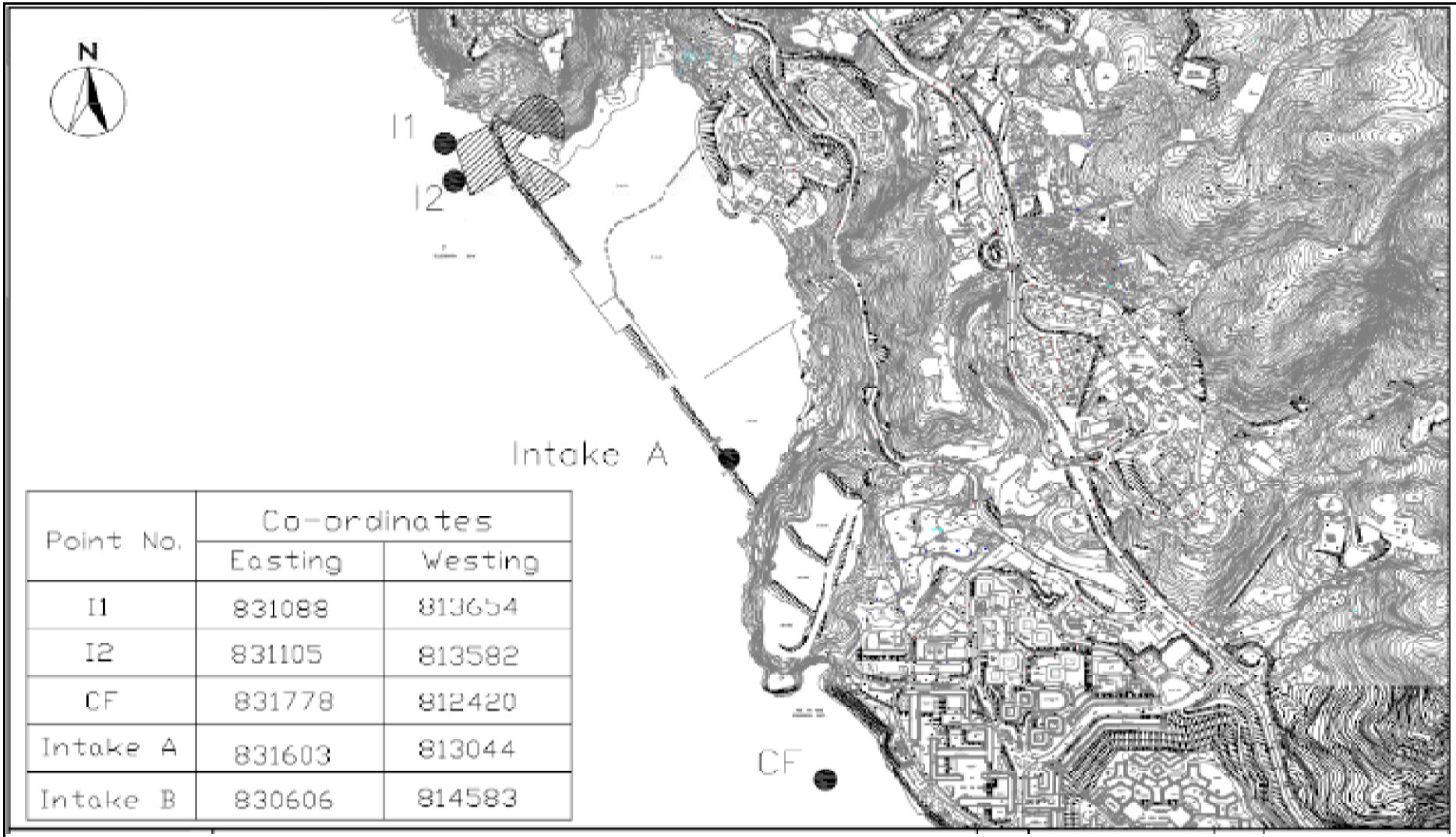
CINOTECH



Point No.	Co-ordinates	
	Easting	Westing
CE	830026	814956
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: N.T.S Date: Jul-08	project No. MA8001 Figure: 4a

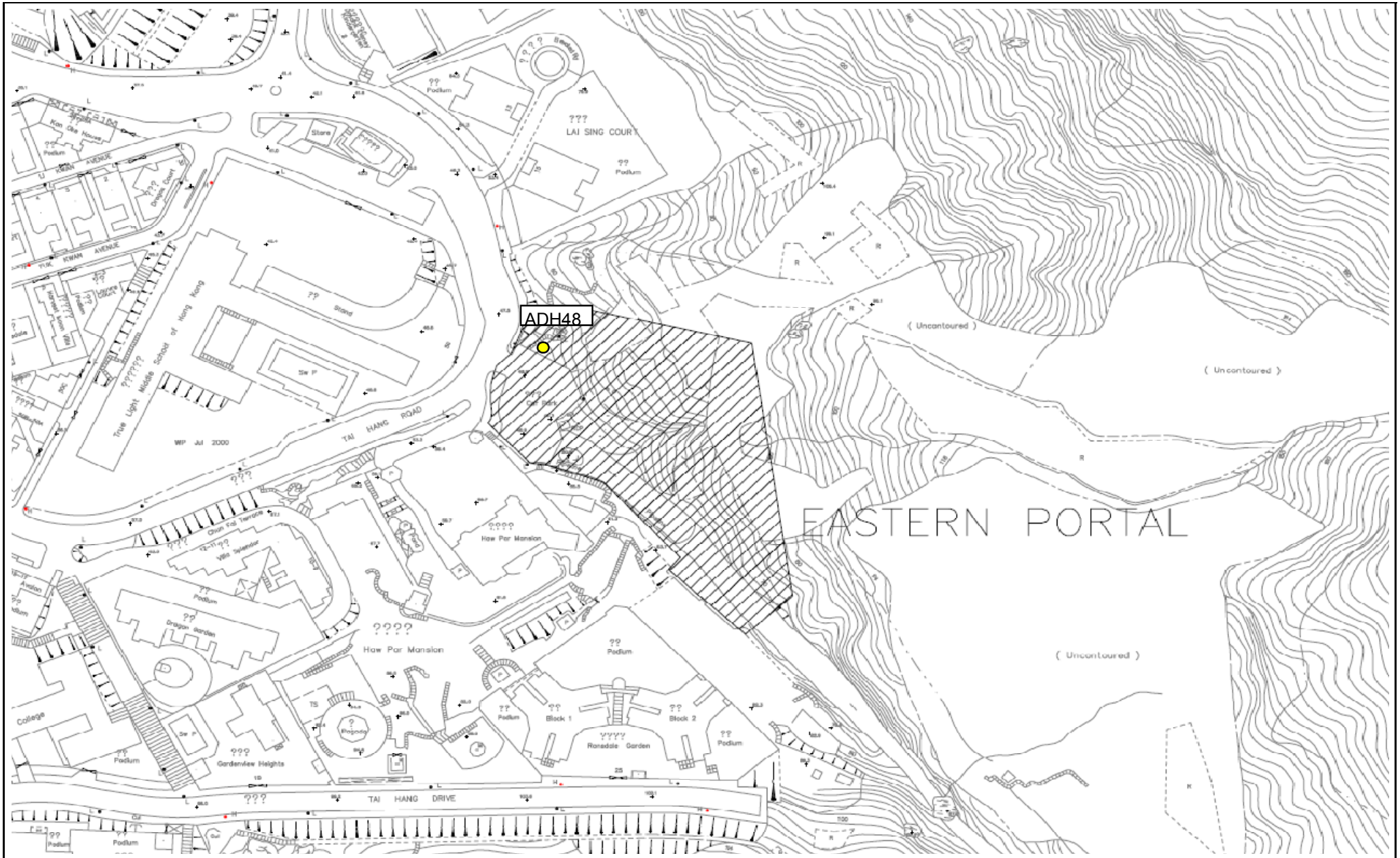
CINOTECH



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

Title		Scale	project
Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel		N.T.S	No. MA8001
Locations of Water Quality Monitoring Stations		Date: Jul-08	Figure: 4b

CINOTECH

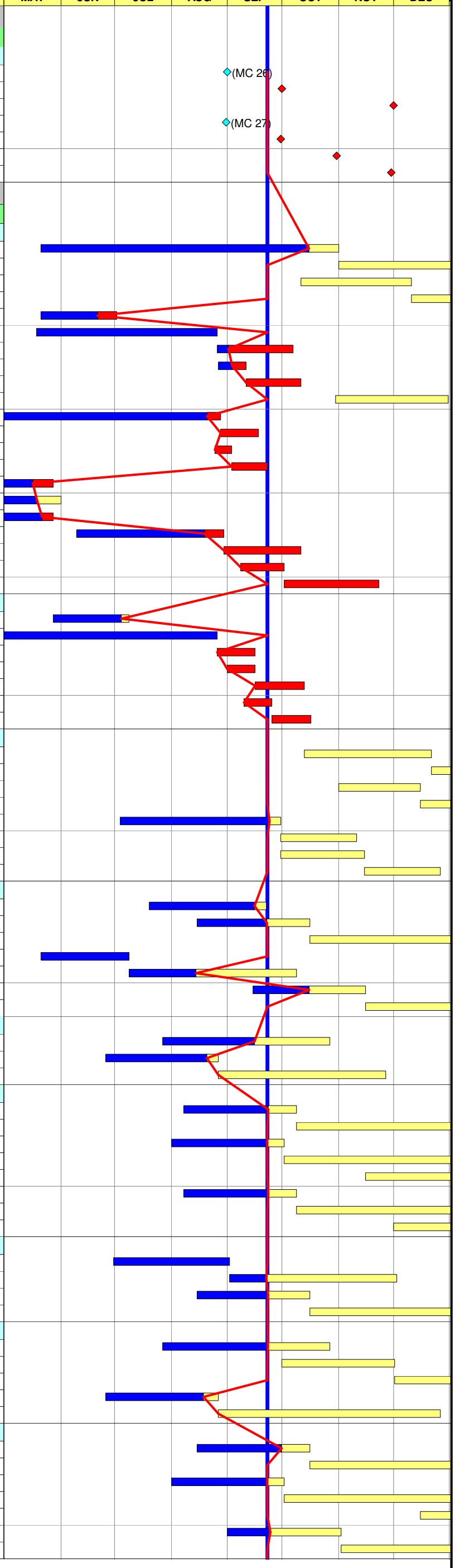


Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel (Eastern Portal) Location of ground water level Monitoring Station	Scale: N.T.S Date: Jul-08	Porject No.: MA8001 Figure: 5

CINOTECH

APPENDIX A
CONSTRUCTION PROGRAMME

Activity ID	Activity Description	Current or Forecast Duration	Current or Forecast Early Start	Current or Forecast Early Finish	Baseline Total Float	Progress Total Float as of 23-Sep-08	% Comp
CC01 - PRELIMINARIES & GENERAL REQUIREMENTS							
Milestone							
General							
M1-1080	1.08-Complete of All Obligat's From 211to270d	0		01/SEP/08A	0		100
M1-1090	1.09-Complete of All Obligat's From 271to300d	0		30/SEP/08*	0	0	0
M1-1100	1.10-Complete of All Obligat's From 301to360d	0		30/NOV/08*	0	0	0
M1-1380	1.38-Acceptance of Monthly Report on TDMS(9M)	0		01/SEP/08A	0		100
M1-1390	1.39-Acceptance of Monthly Report on TDMS(10M)	0		29/SEP/08*	0	0	0
M1-1400	1.40-Acceptance of Monthly Report on TDMS(11M)	0		30/OCT/08*	0	0	0
M1-1410	1.41-Acceptance of Monthly Report on TDMS(12M)	0		29/NOV/08*	0	0	0
CC02 - DESIGN & DESIGN CHECKING OF THE WORKS							
Design Stage							
Secton 1 (Eastern Portal)							
D00240	P&S East P Temp Drainage Divrsn Main Stream AIP	164	25/JUN/08A	25/SEP/08	61	97	90
D00245	APP East P Temp Drainage Divrsn Main Stream AIP	90	26/SEP/08	24/DEC/08	61	97	0
D00250	P&S East P Temp Drainage Divrsn Main Stream DDA	61	11/OCT/08*	10/DEC/08	21	21	0
D00255	APP East P Temp Drainage Divrsn Main Stream DDA	90	11/DEC/08	10/MAR/09	21	21	0
D00275	APP Cofferdam for Intake Shaft DDA	42	21/MAY/08A	06/OCT/08	-88	-185	75
D00280	P&S Temp&Perm Supt EP Non-TBM Tunl to ch250 AIP	43	19/MAY/08A	12/SEP/08A	0		100
D00282	APP Temp&Perm Supt EP Non-TBM Tunl to ch250 AIP	42	13/SEP/08A	24/OCT/08	0	-18	15
D00283	P&S Temp Supt EP Non-TBM Tunnel to Ch250 - DDA	15	16/SEP/08A	30/SEP/08	0	-20	50
D00284	APP Temp Supt EP Non-TBM Tunnel to Ch250 - DDA	30	01/OCT/08	30/OCT/08	0	-20	0
D00286	P&S Perm Supt EP Non-TBM Tunnel to Ch250 - DDA	62	30/OCT/08*	30/DEC/08	504	504	0
D00291	P&S EP Intake Tunnel&Intake Chamber Temp Sup AIP	15	13/MAY/08A	29/SEP/08	0	-33	95
D00292	APP EP Intake Tunnel&Intake Chamber Temp Sup AIP	21	30/SEP/08	20/OCT/08	0	-33	0
D00293	P&S EP Intake Tunnel&Intake Chamber Temp Sup DDA	9	26/AUG/08A	01/OCT/08	0	-29	0
D00294	APP EP Intake Tunnel&Intake Chamber Temp Sup DDA	20	02/OCT/08	21/OCT/08	0	-29	0
D00317	APP Boulder Assess Rep(EP)-inside Bound Stage 1	23	06/FEB/08A	29/SEP/08	-62	-187	90
D00319	APP Boulder Assess Rep(EP)-outside Bound Stage 2	24	09/APR/08A	03/OCT/08	3	63	75
D02334	APP East P Temp Drainage Divn Side Stream-DDA	76	28/MAR/08A	29/SEP/08	-19	-144	90
D02344	P&S Temp Drain Divsn Main Stream ELS - AIP	81	10/JUN/08A	03/OCT/08	0	-35	87
D02354	APP Temp Drain Divsn Main Stream ELS - AIP	42	04/OCT/08	14/NOV/08	0	-35	0
D02364	P&S Temp Drain Divsn Main Stream ELS - DDA	24	23/SEP/08*	16/OCT/08	0	-15	0
D02374	APP Temp Drain Divsn Main Stream ELS - DDA	52	17/OCT/08	07/DEC/08	0	-15	0
Section 1 (Western Portal)							
D00375	APP West Portal ELS for Soft Ground Tunnel DDA	42	12/JUN/08A	29/SEP/08	89	13	90
D00413	P&S Temp ELS WP Deep Struct (Basin)Single SP DDA	120	23/APR/08A	26/AUG/08A	0		100
D00414	APP Temp ELS WP Deep Struct (Basin)Single SP DDA	21	27/AUG/08A	06/OCT/08	0	-21	0
D00421	P&S Temp Suppt Western Portal NON-TBM Tunnel-AIP	15	29/AUG/08A	07/OCT/08	0	-22	0
D00422	APP Temp Suppt Western Portal NON-TBM Tunnel-AIP	27	08/OCT/08	03/NOV/08	0	-22	0
D00423	P&S Temp Suppt Western Portal NON-TBM Tunnel-DDA	15	11/SEP/08A	07/OCT/08	0	-13	0
D00424	APP Temp Suppt Western Portal NON-TBM Tunnel-DDA	22	08/OCT/08	29/OCT/08	0	-13	0
Section 1 (Portion W0) - Dropshaft							
D00630	P&S Dropshaft Temp Rock Supt (Excl. W0) AIP	70	13/OCT/08*	21/DEC/08	97	97	0
D00633	APP Dropshaft Temp Rock Supt (Excl. W0) AIP	91	22/DEC/08	22/MAR/09	97	97	0
D00642	P&S Dropshaft Permanent Lining (Excl W0) AIP	45	01/NOV/08*	15/DEC/08	132	132	0
D00645	APP Dropshaft Permanent Lining (Excl W0) AIP	47	16/DEC/08	31/JAN/09	132	132	0
D00654	P&S Dropshaft & SC at W0 Temp Rock Supt AIP	88	04/JUL/08A	29/SEP/08	48	48	93
D00657	APP Dropshaft & SC at W0 Temp Rock Supt AIP	42	30/SEP/08	10/NOV/08	48	48	0
D00660	P&S Dropshaft & SC at W0 Temp Rock Supt DDA	46	30/SEP/08*	14/NOV/08	2	2	0
D00663	APP Dropshaft & SC at W0 Temp Rock Supt DDA	42	15/NOV/08	26/DEC/08	2	2	0
Section 1 (Portion W0)							
D01145	APP W0-Permanent Works Intake AIP	64	18/JUL/08A	29/SEP/08	98	90	90
D01150	P&S W0-Permanent Works Intake DDA	62	23/AUG/08A	15/OCT/08	831	831	62
D01155	APP W0-Permanent Works Intake DDA	92	16/OCT/08	15/JAN/09	831	831	0
D01156	P&S W0-Temp Works & Drainage Diversion AIP	49	08/MAY/08A	29/AUG/08A	126		100
D01157	APP W0-Temp Works & Drainage Diversion AIP	92	30/SEP/08A	29/NOV/08	126	74	40
D01158	P&S W0-Temp Works & Drainage Diversion DDA	62	27/AUG/08A	27/OCT/08	38	57	50
D01159	APP W0-Temp Works & Drainage Diversion DDA	92	28/OCT/08	27/JAN/09	38	57	0
Section 7 (Portion THR2)							
D00945	APP THR2-Permanent Works Intake AIP	92	08/AUG/08A	07/NOV/08	403	391	55
D00956	P&S THR2-Temp Works & Drainage Diversion AIP	62	26/JUN/08A	29/SEP/08	117	83	90
D00957	APP THR2-Temp Works & Drainage Diversion AIP	92	30/SEP/08	30/DEC/08	117	83	0
Section 4 (Portion MB16)							
D00780	P&S MB16-Permanent Works Intake AIP	62	08/AUG/08A	08/OCT/08	266	266	75
D00785	APP MB16-Permanent Works Intake AIP	92	09/OCT/08	08/JAN/09	266	266	0
D00796	P&S MB16-Temp Works & Drainage Diversion - AIP	62	25/JUL/08A	01/OCT/08	160	160	85
D00797	APP MB16-Temp Works & Drainage Diversion - AIP	92	02/OCT/08	01/JAN/09	160	160	0
D00798	P&S MB16-Temp Works & Drainage Diversion - DDA	62	16/NOV/08*	16/JAN/09	145	145	0
D00820	P&S MB16-Permanent Slopeworks AIP	62	08/AUG/08A	08/OCT/08	139	139	75
D00825	APP MB16-Permanent Slopeworks AIP	122	09/OCT/08	07/FEB/09	139	139	0
D00826	P&S MB16-Permanent Slopeworks DDA	62	01/DEC/08*	31/JAN/09	938	980	0
Section 31 (Portion PFLR1)							
D02250	P&S PFLR1-Permanent Works Intake AIP	64	30/JUN/08A	19/SEP/08A	290		100
D02255	APP PFLR1-Permanent Works Intake AIP	92	20/SEP/08A	20/DEC/08	290	272	22
D02266	P&S PFLR1-Temp Works & Drainage Diversion AIP	62	14/AUG/08A	15/OCT/08	61	61	63
D02267	APP PFLR1-Temp Works & Drainage Diversion AIP	92	16/OCT/08	15/JAN/09	61	61	0
Section30 (Portion HKU1)							
D02205	APP HKU1-Permanent Works Intake AIP	92	08/AUG/08A	27/OCT/08	458	457	63
D02210	P&S HKU1-Permanent Works Intake DDA	62	01/OCT/08*	01/DEC/08	422	422	0
D02215	APP HKU1-Permanent Works Intake DDA	92	02/DEC/08	03/MAR/09	422	422	0
D02216	P&S HKU1-Temp Works & Drainage Diversion AIP	62	26/JUN/08A	30/SEP/08	79	44	87
D02217	APP HKU1-Temp Works & Drainage Diversion AIP	122	01/OCT/08	30/JAN/09	79	44	0
Section 6 (Portion E7)							
D00880	P&S E7 - Permanent Works Intake AIP	62	23/JUL/08A	11/OCT/08	206	210	75
D00885	APP E7 - Permanent Works Intake AIP	92	12/OCT/08	11/JAN/09	206	210	0
D00896	P&S E7 - Temp Works & Drainage Diversion - AIP	62	01/AUG/08A	01/OCT/08	220	220	85
D00897	APP E7 - Temp Works & Drainage Diversion - AIP	92	02/OCT/08	01/JAN/09	220	220	0
D00898	P&S E7 - Temp Works & Drainage Diversion - DDA	62	16/DEC/08*	15/FEB/09	175	175	0
D00920	P&S E7 - Permanent Slopeworks AIP	62	01/SEP/08A	01/NOV/08	591	591	38
D00925	APP E7 - Permanent Slopeworks AIP	122	02/NOV/08	03/MAR/09	591	591	0



Start Date 23/NOV/07
Finish Date 08/FEB/12
Data Date 23/SEP/08
Run Date 27/SEP/08 14:49

Target Bar
Progress Bar
Critical Activity

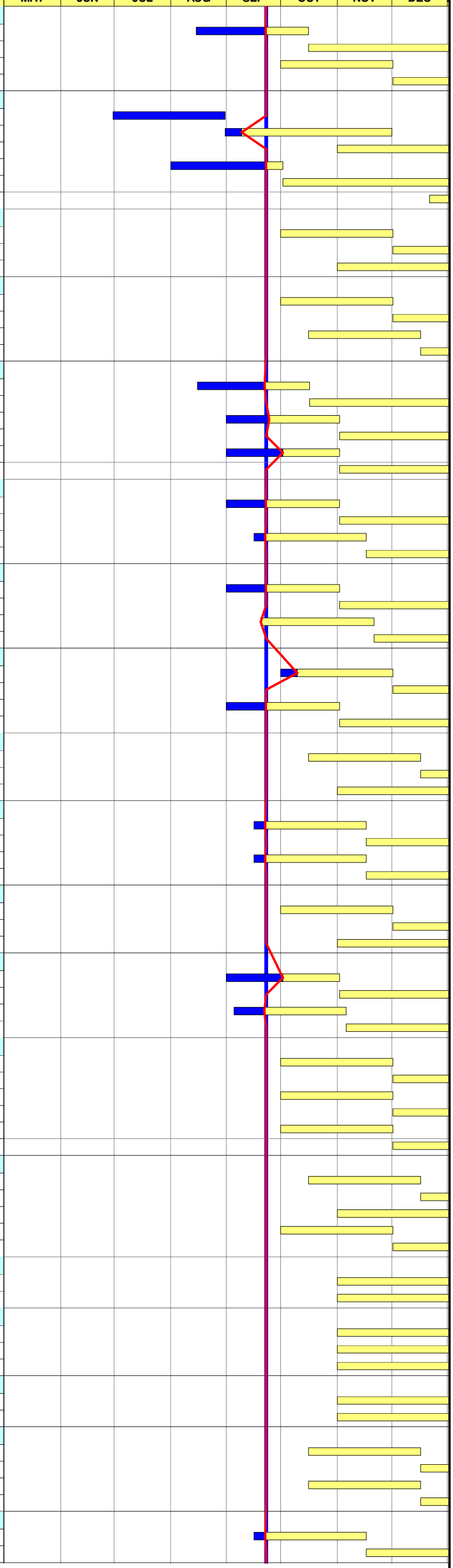
809A

Design & Construction of Hong Kong West Drainage Tunnel
Contract No. DC/2007/10
Works Programme
3 Monthly Rolling Programme
SEP MONTHLY REPORT

Dragages - Nishimatsu Joint Venture

Date	Revision	Checked	Approved
27/SEP/0	10th Monthly Update		
	19Aug08 - 23Sep08		

Activity ID	Activity Description	Current or Forecast Duration	Current or Forecast Early Start	Current or Forecast Early Finish	Baseline Total Float	Progress Total Float as of 23-Sep-08	% Comp
Section 29 (Portion W10)							
D02150	P&S W10-Permanent Works Intake AIP	62	23/AUG/08A	15/OCT/08	430	430	62
D02155	APP W10-Permanent Works Intake AIP	92	16/OCT/08	15/JAN/09	430	430	0
D02166	P&S W10-Temp Works & Drainage Diversion AIP	62	01/OCT/08*	01/DEC/08	75	75	0
D02167	APP W10-Temp Works & Drainage Diversion AIP	122	02/DEC/08	02/APR/09	75	75	0
Section 32 (Portion SM1)							
D02300	P&S SM1-Permanent Works Intake AIP	62	30/JUN/08A	19/SEP/08A	270		100
D02305	APP SM1-Permanent Works Intake AIP	92	20/SEP/08A	20/DEC/08	270	250	10
D02310	P&S SM1-Permanent Works Intake DDA	63	01/NOV/08*	02/JAN/09	237	237	0
D02316	P&S SM1-Temp Works & Drainage Diversion AIP	62	25/JUL/08A	01/OCT/08	238	238	85
D02317	APP SM1-Temp Works & Drainage Diversion AIP	92	02/OCT/08	01/JAN/09	238	238	0
D02318	P&S SM1-Temp Works & Drainage Diversion DDA	62	22/DEC/08*	21/FEB/09	187	187	0
Section 26 (Portion RR1)							
D02000	P&S RR1-Permanent Works Intake AIP	62	01/OCT/08*	01/DEC/08	644	644	0
D02005	APP RR1-Permanent Works Intake AIP	92	02/DEC/08	03/MAR/09	644	644	0
D02016	P&S RR1-Temp Works & Drainage Diversion AIP	62	01/NOV/08*	01/JAN/09	112	112	0
Section 5 (Portion MBD2)							
D00830	P&S MBD2-Permanent Works Intake AIP	62	01/OCT/08*	01/DEC/08	274	274	0
D00835	APP MBD2-Permanent Works Intake AIP	92	02/DEC/08	03/MAR/09	274	274	0
D00850	P&S MBD2-Temp Works & Drainage Diversion AIP	62	16/OCT/08*	16/DEC/08	166	166	0
D00855	APP MBD2-Temp Works & Drainage Diversion AIP	92	17/DEC/08	18/MAR/09	166	166	0
Section 23 (Portion TP4)							
D01840	P&S TP4-Permanent Works Intake AIP	62	16/AUG/08A	15/OCT/08	358	359	60
D01845	APP TP4-Permanent Works Intake AIP	92	16/OCT/08	15/JAN/09	358	359	0
D01856	P&S TP4-Temp Works & Drainage Diversion AIP	62	04/SEP/08A	01/NOV/08	190	190	38
D01857	APP TP4-Temp Works & Drainage Diversion AIP	92	02/NOV/08	01/FEB/09	190	190	0
D01880	P&S TP4-Permanent Slopeworks AIP	62	30/AUG/08A	27/OCT/08	130	135	50
D01885	APP TP4-Permanent Slopeworks AIP	122	28/OCT/08	26/FEB/09	130	135	0
Section 28 (Portion P5)							
D02100	P&S P5-Permanent Works Intake AIP	62	03/SEP/08A	01/NOV/08	323	323	35
D02105	APP P5-Permanent Works Intake AIP	92	02/NOV/08	01/FEB/09	323	323	0
D02116	P&S P5-Temp Works & Drainage Diversion AIP	62	16/SEP/08A	16/NOV/08	248	248	10
D02117	APP P5-Temp Works & Drainage Diversion AIP	122	17/NOV/08	18/MAR/09	248	248	0
Section 22 (Portion TP5)							
D01790	P&S TP5-Permanent Works Intake AIP	62	04/SEP/08A	01/NOV/08	426	426	35
D01795	APP TP5-Permanent Works Intake AIP	92	02/NOV/08	01/FEB/09	426	426	0
D01806	P&S TP5-Temp Works & Drainage Diversion AIP	62	23/SEP/08*	23/NOV/08	206	203	0
D01807	APP TP5-Temp Works & Drainage Diversion AIP	92	24/NOV/08	23/FEB/09	206	203	0
Section 21 (Portion TP789)							
D01730	P&S TP789-Permanent Works Intake AIP	62	16/SEP/08A	16/NOV/08	295	310	15
D01735	APP TP789-Permanent Works Intake AIP	92	17/NOV/08	16/FEB/09	295	310	0
D01746	P&S TP789-Temp Works & Drainage Diversion AIP	62	04/SEP/08A	01/NOV/08	325	325	35
D01747	APP TP789-Temp Works & Drainage Diversion AIP	92	02/NOV/08	01/FEB/09	325	325	0
Section 24 (Portion W5)							
D01904	P&S W5-Permanent Works Intake AIP	62	16/OCT/08*	16/DEC/08	496	496	0
D01905	APP W5-Permanent Works Intake AIP	92	17/DEC/08	18/MAR/09	496	496	0
D01910	P&S W5-Temp Works & Drainage Diversion AIP	63	01/NOV/08*	02/JAN/09	221	221	0
Section 2 (Portion E5A)							
D00680	P&S E5A-Permanent Works Intake AIP	62	19/SEP/08A	16/NOV/08	370	370	10
D00682	APP E5A-Permanent Works Intake AIP	92	17/NOV/08	16/FEB/09	370	370	0
D00687	P&S E5A-Temp Works & Drainage Diversion AIP	62	16/SEP/08A	16/NOV/08	243	243	10
D00688	APP E5A-Temp Works & Drainage Diversion AIP	92	17/NOV/08	16/FEB/09	243	243	0
Section 27 (Portion W8)							
D02050	P&S W8-Permanent Works Intake AIP	62	01/OCT/08*	01/DEC/08	605	605	0
D02055	APP W8-Permanent Works Intake AIP	92	02/DEC/08	03/MAR/09	605	605	0
D02066	P&S W8-Temp Works & Drainage Diversion AIP	62	01/NOV/08*	01/JAN/09	226	226	0
Section 3 (Portion E5B)							
D00730	P&S E5B-Permanent Works Intake AIP	62	01/SEP/08A	23/OCT/08	427	436	50
D00735	APP E5B-Permanent Works Intake AIP	92	24/OCT/08	23/JAN/09	427	436	0
D00746	P&S E5B-Temp Works & Drainage Diversion AIP	62	09/SEP/08A	05/NOV/08	334	334	27
D00747	APP E5B-Temp Works & Drainage Diversion AIP	92	06/NOV/08	05/FEB/09	334	334	0
Section 20 (Portion M3)							
D01670	P&S M3-Permanent Works Intake AIP	62	01/OCT/08*	01/DEC/08	306	306	0
D01675	APP M3-Permanent Works Intake AIP	92	02/DEC/08	03/MAR/09	306	306	0
D01686	P&S M3-Temp Works & Drainage Diversion AIP	62	01/OCT/08*	01/DEC/08	306	306	0
D01687	APP M3-Temp Works & Drainage Diversion AIP	92	02/DEC/08	03/MAR/09	306	306	0
D01710	P&S M3-Permanent Slopeworks AIP	62	01/OCT/08*	01/DEC/08	246	246	0
D01715	APP M3-Permanent Slopeworks AIP	122	02/DEC/08	02/APR/09	246	246	0
Section 19 (Portion MA17)							
D01610	P&S MA17-Permanent Works Intake AIP	62	16/OCT/08*	16/DEC/08	252	252	0
D01615	APP MA17-Permanent Works Intake AIP	92	17/DEC/08	18/MAR/09	252	252	0
D01626	P&S MA17-Temp Works & Drainage Diversion AIP	63	01/NOV/08*	02/JAN/09	235	235	0
D01650	P&S MA17-Permanent Slopeworks AIP	62	01/OCT/08*	01/DEC/08	269	269	0
D01655	APP MA17-Permanent Slopeworks AIP	122	02/DEC/08	02/APR/09	269	269	0
Section 15 (Portion W3)							
D01400	P&S W3-Permanent Works Intake AIP	62	01/NOV/08*	01/JAN/09	472	472	0
D01416	P&S W3-Temp Works & Drainage Diversion AIP	62	01/NOV/08*	01/JAN/09	534	534	0
Section 17 (Portion MA14)							
D01500	P&S MA14-Permanent Works Intake AIP	62	01/NOV/08*	01/JAN/09	413	413	0
D01516	P&S MA14-Temp Works & Drainage Diversion AIP	62	01/NOV/08*	01/JAN/09	344	344	0
D01540	P&S MA14-Permanent Slopeworks AIP	62	01/NOV/08*	01/JAN/09	323	323	0
Section 18 (Portion MA15)							
D01560	P&S MA15-Permanent Works Intake AIP	62	01/NOV/08*	01/JAN/09	402	402	0
D01580	P&S MA15-Temp Works & Drainage Diversion AIP	62	01/NOV/08*	01/JAN/09	286	286	0
Section 10 (Portion DG1)							
D01090	P&S DG1-Permanent Works Intake AIP	62	16/OCT/08*	16/DEC/08	350	350	0
D01095	APP DG1-Permanent Works Intake AIP	92	17/DEC/08	18/MAR/09	350	350	0
D01106	P&S DG1-Temp Works & Drainage Diversion AIP	62	16/OCT/08*	16/DEC/08	319	319	0
D01107	APP DG1-Temp Works & Drainage Diversion AIP	92	17/DEC/08	18/MAR/09	319	319	0
Section 9 (Portion HR1)							
D01040	P&S HR1-Permanent Works Intake AIP	62	19/SEP/08A	16/NOV/08	607	607	10
D01045	APP HR1-Permanent Works Intake AIP	92	17/NOV/08	16/FEB/09	607	607	0



Start Date 23/NOV/07
Finish Date 08/FEB/12
Data Date 23/SEP/08
Run Date 27/SEP/08 14:49

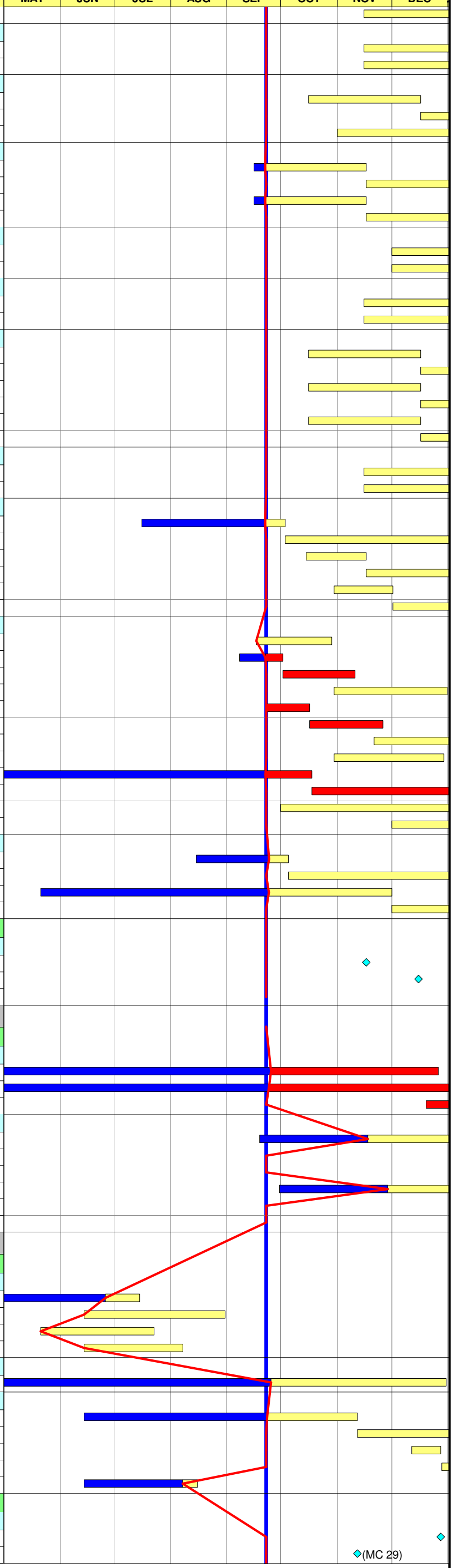
Target Bar
Progress Bar
Critical Activity

809A

Design & Construction of Hong Kong
West Drainage Tunnel
Contract No. DC/2007/10
Works Programme
3 Monthly Rolling Programme
SEP MONTHLY REPORT

Date	Revision	Checked	Approved
27/SEP/0	10th Monthly Update		
	19Aug08 - 23Sep08		

Activity ID	Activity Description	Current or Forecast Duration	Current or Forecast Early Start	Current or Forecast Early Finish	Baseline Total Float	Progress Total Float as of 23-Sep-08	% Comp
D01056	P&S HR1-Temp Works & Drainage Diversion AIP	62	16/NOV/08*	16/JAN/09	348	348	0
Section 14 (Portion BR6)							
D01350	P&S BR6-Permanent Works Intake AIP	62	16/NOV/08*	16/JAN/09	365	365	0
D01370	P&S BR6-Temp Works & Drainage Diversion AIP	62	16/NOV/08*	16/JAN/09	302	302	0
Section 12 (Portion W1)							
D01250	P&S W1-Permanent Works Intake AIP	62	16/OCT/08*	16/DEC/08	404	404	0
D01255	APP W1-Permanent Works Intake AIP	92	17/DEC/08	18/MAR/09	404	404	0
D01266	P&S W1-Temp Works & Drainage Diversion AIP	62	01/NOV/08*	01/JAN/09	396	396	0
Section 8 (Portion GL1)							
D00990	P&S GL1-Permanent Works Intake AIP	62	23/SEP/08*	16/NOV/08	420	420	10
D00995	APP GL1-Permanent Works Intake AIP	92	17/NOV/08	16/FEB/09	420	420	0
D01006	P&S GL1-Temp Works & Drainage Diversion AIP	62	18/SEP/08A	16/NOV/08	395	395	10
D01007	APP GL1-Temp Works & Drainage Diversion AIP	92	17/NOV/08	16/FEB/09	395	395	0
Section 25 (Portion CR1)							
D01950	P&S CR1-Permanent Works Intake AIP	63	01/DEC/08*	01/FEB/09	462	462	0
D01966	P&S CR1-Temp Works & Drainage Diversion AIP	63	01/DEC/08*	01/FEB/09	402	402	0
Section 13 (Portion BR5)							
D01300	P&S BR5-Permanent Works Intake AIP	62	16/NOV/08*	16/JAN/09	484	484	0
D01316	P&S BR5-Temp Works & Drainage Diversion AIP	62	16/NOV/08*	16/JAN/09	422	422	0
Section 11 (Portion BR4)							
D01190	P&S BR4-Permanent Works Intake AIP	62	16/OCT/08*	16/DEC/08	575	575	0
D01195	APP BR4-Permanent Works Intake AIP	92	17/DEC/08	18/MAR/09	575	575	0
D01206	P&S BR4-Temp Works & Drainage Diversion AIP	62	16/OCT/08*	16/DEC/08	599	599	0
D01207	APP BR4-Temp Works & Drainage Diversion AIP	92	17/DEC/08	18/MAR/09	599	599	0
D01230	P&S BR4-Permanent Slopeworks AIP	62	16/OCT/08*	16/DEC/08	985	1,027	0
D01235	APP BR4-Permanent Slopeworks AIP	122	17/DEC/08	17/APR/09	985	1,027	0
Section 16 (Portion B2)							
D01450	P&S B2-Permanent Works Intake AIP	62	16/NOV/08*	16/JAN/09	524	524	0
D01466	P&S B2-Temp Works & Drainage Diversion AIP	62	16/NOV/08*	16/JAN/09	477	477	0
Adits & Stilling Chambers							
D00520	P&S Adits & Stilling Chamber Temp Support AIP	79	16/JUL/08A	03/OCT/08	116	115	86
D00525	APP Adits & Stilling Chamber Temp Support AIP	92	04/OCT/08	03/JAN/09	116	115	0
D00540	P&S Adits & SC Permanent Lining AIP	33	15/OCT/08*	16/NOV/08	97	97	0
D00545	APP Adits & SC Permanent Lining AIP	92	17/NOV/08	16/FEB/09	97	97	0
D00560	P&S SCs Permanent Lining AIP	33	23/SEP/08	25/OCT/08	82	119	0
D00565	APP SCs Permanent Lining AIP	92	26/OCT/08	25/JAN/09	82	119	0
Project Wide							
D00145	APP Detailed Const Risk Assess(Portals) DDA	42	23/SEP/08	03/NOV/08	11	5	0
D00147	P&S Det Const Risk Assess Vol 1-(W0) DDA	24	09/SEP/08A	01/OCT/08	0	0	60
D00148	APP Det Const Risk Assess(excl Portals) DDA	40	02/OCT/08	10/NOV/08	0	0	0
D00149	P&S DCRA V2-PFLR1,SM1,HKU1,E7,MBD2,MB16,etc DDA	63	30/OCT/08*	31/DEC/08	86	86	0
D00160	P&S Impact Assess Rep Waterwork Fac V 1-(W0) DDA	24	23/SEP/08*	16/OCT/08	0	0	0
D00161	APP Impact Assess Rep Waterwork Fac V 1-(W0) DDA	40	17/OCT/08	25/NOV/08	0	0	0
D00162	P&S Impact ARW V 2-PFLR1,SM1,HKU1,THR2,etc DDA	63	21/NOV/08*	22/JAN/09	183	183	0
D00168	P&S Water Inflow Assess Rep(Tunnel, Adit & DS)	61	30/OCT/08*	29/DEC/08	24	24	0
D00188	P&S Blasting Assessment - Volume 2B(Adit W0)	50	30/APR/08A	17/OCT/08	0	0	85
D00189	APP Blasting Assessment - Volume 2B(Adit W0)	92	18/OCT/08	17/JAN/09	0	0	0
D00190	P&S BA - Vol 3A(E5A,MB16,MBD2,E7,THR2,HR1,GL1)	93	01/OCT/08*	01/JAN/09	177	177	0
D00192	P&S BA-Vol 3B MA17,M3,TP789,TP4-5,HKU1,PFLR1,SM1	93	01/DEC/08*	03/MAR/09	113	113	0
Main Tunnel							
D00440	P&S Adit/main tun intrct Temp Sup(excl W0) AIP	51	15/AUG/08A	05/OCT/08	269	268	79
D00445	APP Adit/main tun intrct Temp Sup(excl W0) AIP	122	06/OCT/08	04/FEB/09	269	268	0
D00500	P&S TBM Dismantle Chamber Temp Supt at W0 AIP	194	16/MAY/08A	30/NOV/08	672	672	65
D00505	APP TBM Dismantle Chamber Temp Supt at W0 AIP	92	01/DEC/08	02/MAR/09	672	672	0
Milestone							
Design Submission							
M2-1070	2.07-AIP-Adits&Stilling Chambers Submission	0		16/NOV/08	1,137	1,179	0
M2-1110	2.11-AIP-Dropshaft Submission	0		15/DEC/08	1,108	1,150	0
M2-1151	2.15A - AIP-Intakes Submission (33%)	0		01/SEP/08A	0		100
CC03-PART OF SECTION 1 OF THE WORKS(MAIN TUNNEL)							
Preliminary and General Requirements							
TBM Procurement & Delivery							
B2023	TBM Fabrication for 6.25m ID (Eastern Tunnel)	361	19/JAN/08A	30/JAN/09	0	-35	73
B2030	336TBM Fabrication for 7.25m ID (Western Tunnel)	336	19/JAN/08A	19/DEC/08	0	0	71
B2040	TBM Transport & Delivery to Site(Western Portal)	36	20/DEC/08	24/JAN/09	0	0	0
Prefabrication Precast Segment for Main Tunnel							
B2220	Segment Mould Fabrication (E.Tunnel)	120	18/JUN/08A	17/OCT/08	61	152	50
B2230	Segment Mould Delivery & Installation (E.Tunnel)	30	18/OCT/08	16/NOV/08	61	152	0
B2240	Precast Segment Fabrication (E.Tunnel)	452	17/NOV/08	11/FEB/10	61	152	0
B2260	Segment Mould Fabrication (W.Tunnel) - 8nos.	120	18/JUN/08A	20/NOV/08	5	73	50
B2270	Segment Mould Delivery & Installation (W.Tunnel)	30	21/NOV/08	20/DEC/08	5	73	0
B2280	Precast Segment Fabrication (W.Tunnel)	640	21/DEC/08	21/SEP/10	5	73	0
CC5-PART OF SECTION 1 OF THE WORKS (EAST PORTAL)							
Construction							
Preliminary Works							
EPA0175	Provision of High Voltage line by HEC (Pillar 1)	133	07/JAN/08A	03/OCT/08	155	93	90
EPA0180	Noise Enclosure for Temporary Stockpile Yard	60	23/SEP/08	03/DEC/08	57	81	0
EPA0190	Noise Enclosure for Wastewater Treatment PLant	48	23/SEP/08	19/NOV/08	57	58	0
EPA0200	Noise Enclosure at Tunnel Entrance	42	23/SEP/08	12/NOV/08	75	20	0
Application for Permit / Licences / Supplies							
EPB0160	Power Supply for Tunnel Works	279	07/JAN/08A	30/DEC/08	3	3	73
Stage 1 (Before TBM Drive)							
EPC0150	Ini Excav-Launch Tunl Non-Blast Method (0-CH43)	117	11/JUN/08A	27/OCT/08	0	13	67
EPC0160	Excavation for Launch Tunnel by D&B (upto CH77)	65	28/OCT/08	14/JAN/09	0	13	0
EPC0170	Excavation for Intake Tunnel by D&B (upto CH8)	12	27/NOV/08	10/DEC/08	8	21	0
EPC0180	Excav for Temporary Spoil Cavern by D&B (20m)	19	11/DEC/08	05/JAN/09	8	21	0
EPC0190	Temp Cofferdam for Access for Segment Delivery	48	18/AUG/08A	27/SEP/08	44	101	87
Milestone							
Secton 1 (Eastern Portal)							
M5-1070	5.07-Excavation(Intake Tunnel)	0		10/DEC/08	1,096	1,155	0
M5-1090	5.09-Excavation(Maintenance Clamber)	0		01/SEP/08A	1,142		100



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Target Bar
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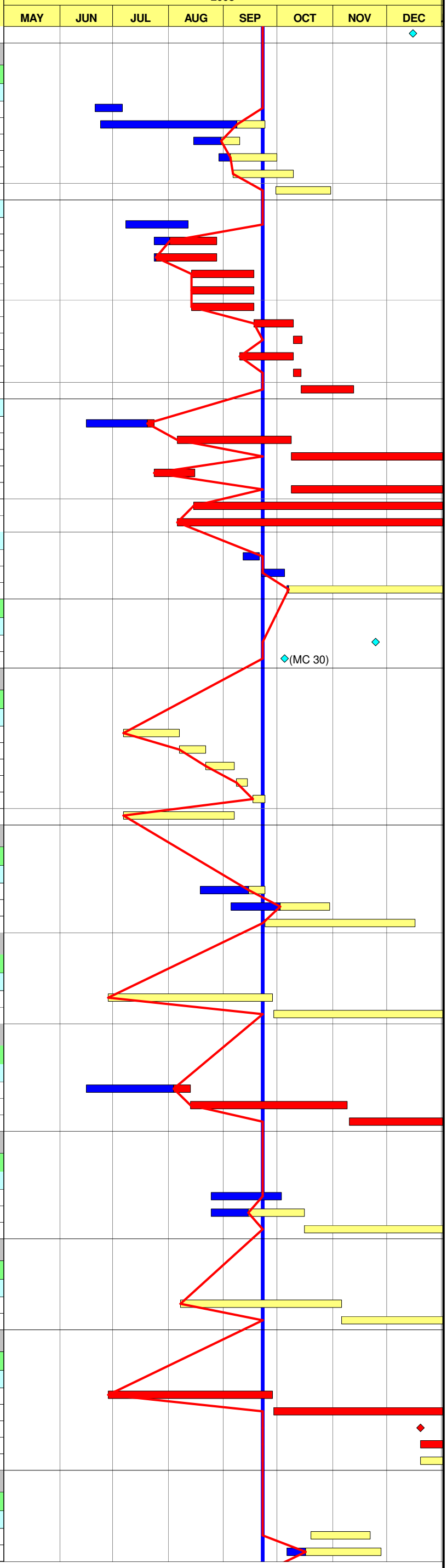
Sheet 3 of 6

Design & Construction of Hong Kong
West Drainage Tunnel
Contract No. DC/2007/10
Works Programme
3 Monthly Rolling Programme
SEP MONTHLY REPORT

Dragages - Nishimatsu Joint Venture

Date	Revision	Checked	Approved
27/SEP/0	10th Monthly Update		
	19Aug08 - 23Sep08		

Activity ID	Activity Description	Current or Forecast Duration	Current or Forecast Early Start	Current or Forecast Early Finish	Baseline Total Float	Progress Total Float as of 23-Sep-08	% Comp
M5-1120	5.12-Excavation(Intake Chamber)	0		30/NOV/08	1,108	1,165	0
CC6-PART OF SECTION 1 OF THE WORKS (WEST PORTAL)							
Construction							
Sea Wall & Termporary Pier Construction							
WPE0220	Level Seabed w/ rock Fill	11	12/AUG/08A	25/AUG/08A	52		100
WPE0240	Install Precast Seawall Blocks & Armour Rock	70	13/AUG/08A	06/OCT/08	52	65	83
WPE0260	Installation of Geotextile	20	14/JUL/08A	30/SEP/08	52	46	60
WPE0280	Backfill with Rockfill to Top	25	27/AUG/08A	11/OCT/08	52	44	20
WPE0300	Construction of 10T Bollard and In-situ Coping	25	23/SEP/08	23/OCT/08	52	40	0
WPE0320	Construction of Temp. Site Slab + Access	25	16/OCT/08	13/NOV/08	52	40	0
Stilling Basin & TBM Launch Shaft Construction							
WPF0080	Cut platform to +4mpD	26	24/MAY/08A	18/SEP/08A	1		100
WPF0100	Predrill and Fill Hole for Single Sheetpile	26	11/AUG/08A	23/OCT/08	1	-27	25
WPF0160	Driven Pipe pile upto Exist Shore Line	26	11/SEP/08A	24/OCT/08	1	-28	3
WPF0180	ELS - 1st Layer of Strut	26	13/OCT/08	11/NOV/08	1	-28	0
WPF0200	Excavation 1st Layer & Temp. Ramp for Dump Truck	26	13/OCT/08	11/NOV/08	1	-28	0
WPF0220	ELS - Remaining Strutting and Excavation.	26	13/OCT/08	11/NOV/08	1	-28	0
WPF0240	Construct 1m Tk. Upper Perm. Base Slab & Wall	17	12/NOV/08	01/DEC/08	1	-28	0
WPF0260	Backfill above the Upper Perm. Slab	4	02/DEC/08	05/DEC/08	1	-28	0
WPF0280	ELS - Slab Zone (Sloping)	22	06/NOV/08	01/DEC/08	1	-28	0
WPF0300	Blinding for Slab(Sloping)	3	02/DEC/08	04/DEC/08	1	-28	0
WPF0320	Construct 1m Tk. Perm. Base Slab & Wall(Sloping)	26	05/DEC/08	07/JAN/09	1	-28	0
Site Installation - Phase 2							
WPC0120	Transformer Room for 11KV	30	11/JUL/08A	14/OCT/08	2	-28	90
WPC0140	Spoil Basin-(WP)	48	25/OCT/08	19/DEC/08	2	-28	0
WPC0160	Conveyor Belt-(WP)	80	20/DEC/08	30/MAR/09	2	-28	0
WPC0200	Tower Crane Footing	17	15/OCT/08	03/NOV/08	2	-28	0
WPC0220	Gantry Crane	73	20/DEC/08	21/MAR/09	16	-20	0
WPC0240	Other Temp. Facilities for TMB Operation	100	19/NOV/08	21/MAR/09	16	-20	0
WPC0260	Noise Enclosure	120	25/OCT/08	20/MAR/09	23	-19	0
Slope Stabilization							
WPD0260	Cut 40 deg. Slope at Tunnel Portal	6	19/AUG/08A	26/AUG/08A	0		100
WPD0280	Temp Soil Nail Installation Tunnel Portal Face	11	27/AUG/08A	13/SEP/08A	0		100
WPD0290	BreakOut with PowerKing RockSplitter(to CH10533)	84	17/SEP/08A	05/JAN/09	0	9	1
Milestone							
Section 1 (Western Portal)							
M6-1080	6.07-Excavation(Arch-shaped Transitional Tunnel)	0		13/NOV/08	1,129	1,182	0
M6-1120	6.11-Slopeworks	0		01/SEP/08A	1,180		100
CC7 -PART OF SECTION 1 OF THE WORKS (PORTION W0)							
Construction							
Preliminary Works							
S010112	Obtain permit Env Baseline Monitor Inst(W0)	24	23/SEP/08	22/OCT/08	78	19	0
S010114	Install ENV Instruments & start monitor-(W0)	12	23/OCT/08	05/NOV/08	78	19	0
S010116	P&S Environmental Baseline Monitoring Report(W0)	12	06/NOV/08	19/NOV/08	78	19	0
S010118	Conduct Tree Survey-(W0)	6	20/NOV/08	26/NOV/08	78	19	0
S010119	P & S Tree Survey Report-(W0)	6	27/NOV/08	03/DEC/08	78	19	0
S010121	TMLG submission, coordination & Approval - W0	48	23/SEP/08	19/NOV/08	90	31	0
CC8 - SECTION 2 OF THE WORKS (PORTION E5A)							
Construction							
Preliminary Works							
S020020	Conduct Ground Investigation Works - E5A	27	08/SEP/08A	03/OCT/08	116	108	75
S020025	Conduct Utility Identification Works - E5A	43	03/SEP/08A	18/OCT/08	116	125	50
S020030	Prepare Utility Diversion Plans - E5A	70	04/OCT/08	27/DEC/08	116	108	0
CC9 - SECTION 3 OF THE WORKS (PORTION E5B)							
Construction							
Preliminary Works							
S030010	Prepare Utility Diversion Plans - E5B	70	23/SEP/08	15/DEC/08	209	144	0
S030020	Notify,Coord&Obtain Permit-Utility Prov - E5B	149	16/DEC/08	30/JUN/09	209	144	0
CC10-SECTION 4 OF THE WORKS (PORTION MB16)							
Construction							
Preliminary Works							
S040010	Conduct Ground Investigation Works - MB16	44	18/JUL/08A	24/SEP/08	28	-5	84
S040020	Prepare Utility Diversion Plans - MB16	70	25/SEP/08	17/DEC/08	28	-5	0
S040030	Notify,Coord&Obtain Permit-Utility Prov - MB16	149	18/DEC/08	03/JUL/09	28	-5	0
CC11-SECTION 5 OF THE WORKS (PORTION MBD2)							
Construction							
Preliminary Works							
S050010	Conduct Ground Investigation Works - MBD2	30	14/AUG/08A	13/SEP/08A	91		100
S050015	Conduct Utility Identification Works - MBD2	40	08/SEP/08A	28/OCT/08	81	70	40
S050020	Prepare Utility Diversion Plans - MBD2	70	29/OCT/08	21/JAN/09	81	70	0
CC12-SECTION 6 OF THE WORKS (PORTION E7)							
Construction							
Preliminary Works							
S060020	Prepare Utility Diversion Plans - E7	70	23/SEP/08	15/DEC/08	76	42	0
S060030	Notify,Coord&Obtain Permit-Utility Prov - E7	149	16/DEC/08	30/JUN/09	76	42	0
CC13-SECTION 7 OF THE WORKS (PORTION THR2)							
Construction							
Preliminary Works							
S070010	Prepare Utility Diversion Plans - THR2	70	23/SEP/08*	15/DEC/08	52	-13	0
S070020	Notify,Coord&Obtain Permit-Utility Prov - THR2	149	16/DEC/08	30/JUN/09	52	-13	0
S070100	Notify SO for Portion Possession - (THR2)	0		19/DEC/08*	0	0	0
S070110	25 wks prior to Portion Possess Date-(THR2)	175	20/DEC/08	12/JUN/09	0	0	0
S070112	Obtain permit Env Base Monitor Inst(THR2)	24	20/DEC/08	20/JAN/09	72	72	0
CC14-SECTION 8 OF THE WORKS (PORTION GL1)							
Construction							
Preliminary Works							
S080010	Conduct Ground Investigation Works - GL1	29	20/OCT/08	21/NOV/08	222	222	0
S080015	Conduct Utility Identification Works - GL1	45	18/SEP/08A	22/NOV/08	217	221	20



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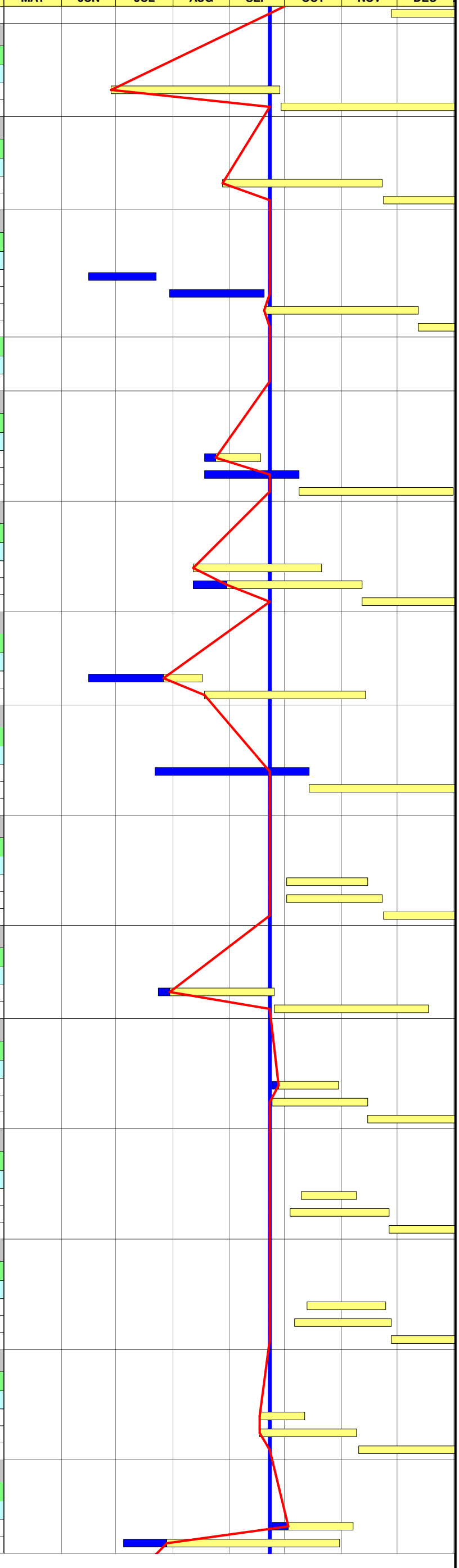
S080020	Prepare Utility Diversion Plans - GL1	70	24/NOV/08	19/FEB/09	217	221	0
CC15-SECTION9 OF THE WORKS(PORTION HR1)							
Construction							
Preliminary Works							
S090020	Prepare Utility Diversion Plans - HR1	70	23/SEP/08*	15/DEC/08	329	264	0
S090030	Notify,Coord&Obtain Permit-Utility Prov - HR1	149	16/DEC/08	30/JUN/09	329	264	0
CC16-SECTION 10 OF THE WORKS (PORTION DG1)							
Construction							
Preliminary Works							
S100020	Prepare Utility Diversion Plans - DG1	70	23/SEP/08	15/DEC/08	234	215	0
S100030	Notify,Coord&Obtain Permit-Utility Prov - DG1	149	16/DEC/08	30/JUN/09	234	215	0
CC20-SECTION 14 OF THE WORKS (PORTION BR6)							
Construction							
Preliminary Works							
S140010	Conduct Ground Investigation Works - BR6	29	18/AUG/08A	17/SEP/08A	251		100
S140015	Conduct Utility Identification Works - BR6	39	05/AUG/08A	05/SEP/08A	251		100
S140020	Prepare Utility Diversion Plans - BR6	70	23/SEP/08	15/DEC/08	251	249	0
S140030	Notify,Coord&Obtain Permit-Utility Prov - BR6	149	16/DEC/08	30/JUN/09	251	249	0
Milestone							
Section 14 (Portion BR6)							
M201010	20.01-Pre-drilling & Grouting Works (Dropshaft)	0		01/SEP/08A	481		100
CC21-SECTION 15 OF THE WORKS (PORTION W3)							
Construction							
Preliminary Works							
S150010	Conduct Ground Investigation Works - W3	23	16/SEP/08A	14/OCT/08	77	56	20
S150015	Conduct Utility Identification Works - W3	39	16/SEP/08A	20/SEP/08A	222		100
S150020	Prepare Utility Diversion Plans - W3	70	15/OCT/08	07/JAN/09	222	217	0
CC25-SECTION 19 OF THE WORKS (PORTION MA17)							
Construction							
Preliminary Works							
S190010	Conduct Ground Investigation Works - MA17	54	23/SEP/08	26/NOV/08	159	127	0
S190015	Conduct Utility Identification Works - MA17	73	25/AUG/08A	01/DEC/08	140	123	20
S190020	Prepare Utility Diversion Plans - MA17	70	02/DEC/08	27/FEB/09	140	123	0
CC26-SECTION 20 OF THE WORKS (PORTION M3)							
Construction							
Preliminary Works							
S200010	Conduct G Investigation Works - M3	48	18/AUG/08A	11/OCT/08	199	157	66
S200020	Prepare Utility Diversion Plans - M3	70	13/OCT/08	05/JAN/09	199	157	0
CC27-SECTION 21 OF THE WORKS (PORTION TP789)							
Construction							
Preliminary Works							
S210010	Conduct Ground Investigation Works -TP789	63	18/AUG/08A	13/SEP/08A	98		100
S210020	Prepare Utility Diversion Plans - TP789	70	23/SEP/08	15/DEC/08	98	114	0
S210030	Notify,Coord&Obtain Permit-Utility Prov - TP789	149	16/DEC/08	30/JUN/09	98	114	0
CC28-SECTION 22 OF THE WORKS (PORTION TP5)							
Construction							
Preliminary Works							
S220010	Conduct Ground Investigation Works -TP5	37	15/OCT/08	26/NOV/08	66	56	0
S220015	Conduct Utility Identification Works - TP5	44	02/OCT/08	22/NOV/08	59	59	0
S220020	Prepare Utility Diversion Plans - TP5	70	27/NOV/08	23/FEB/09	59	56	0
CC29-SECTION 23 OF THE WORKS (PORTION TP4)							
Construction							
Preliminary Works							
S230010	Conduct Ground Investigation Works -TP4	47	18/SEP/08A	14/NOV/08	86	44	10
S230020	Prepare Utility Diversion Plans - TP4	70	15/NOV/08	11/FEB/09	86	44	0
CC30-SECTION 24 OF THE WORKS (PORTION W5)							
Construction							
Preliminary Works							
S240010	Conduct Ground Investigation Works -W5	29	20/SEP/08A	27/OCT/08	100	102	10
S240015	Conduct Utility Identification Works - W5	43	24/SEP/08	14/NOV/08	86	86	0
S240020	Prepare Utility Diversion Plans - W5	70	15/NOV/08	11/FEB/09	86	86	0
CC31-SECTION 25 OF THE WORKS (PORTION CR1)							
Construction							
Preliminary Works							
S250010	Conduct Ground Investigation Works -CR1	26	10/OCT/08	08/NOV/08	243	243	0
S250015	Conduct Utility Identification Works - CR1	45	04/OCT/08	26/NOV/08	228	228	0
S250020	Prepare Utility Diversion Plans - CR1	70	27/NOV/08	23/FEB/09	228	228	0
CC32-SECTION 26 OF THE WORKS (PORTION RR1)							
Construction							
Preliminary Works							
S260010	Conduct Ground Investigation Works -RR1	37	13/OCT/08	24/NOV/08	35	35	0
S260015	Conduct Utility Identification Works - RR1	45	06/OCT/08	27/NOV/08	32	32	0
S260020	Prepare Utility Diversion Plans - RR1	70	28/NOV/08	24/FEB/09	32	32	0
CC33-SECTION 27 OF THE WORKS (PORTION W8)							
Construction							
Preliminary Works							
S270010	Conduct Ground Investigation Works -W8	20	23/SEP/08	17/OCT/08	138	133	0
S270015	Conduct Utility Identification Works - W8	44	23/SEP/08	14/NOV/08	114	109	0
S270020	Prepare Utility Diversion Plans - W8	70	15/NOV/08	11/FEB/09	114	109	0
CC34-SECTION 28 OF THE WORKS (PORTION P5)							
Construction							
Preliminary Works							
S280010	Conduct Ground Investigation Works -P5	36	08/SEP/08A	24/OCT/08	87	98	20
S280015	Conduct Utility Identification Works - P5	91	08/SEP/08A	29/DEC/08	93	44	20



Start Date 23/NOV/07
Finish Date 08/FEB/12
Data Date 23/SEP/08
Run Date 27/SEP/08 14:49

Target Bar
Progress Bar
Critical Activity

809A

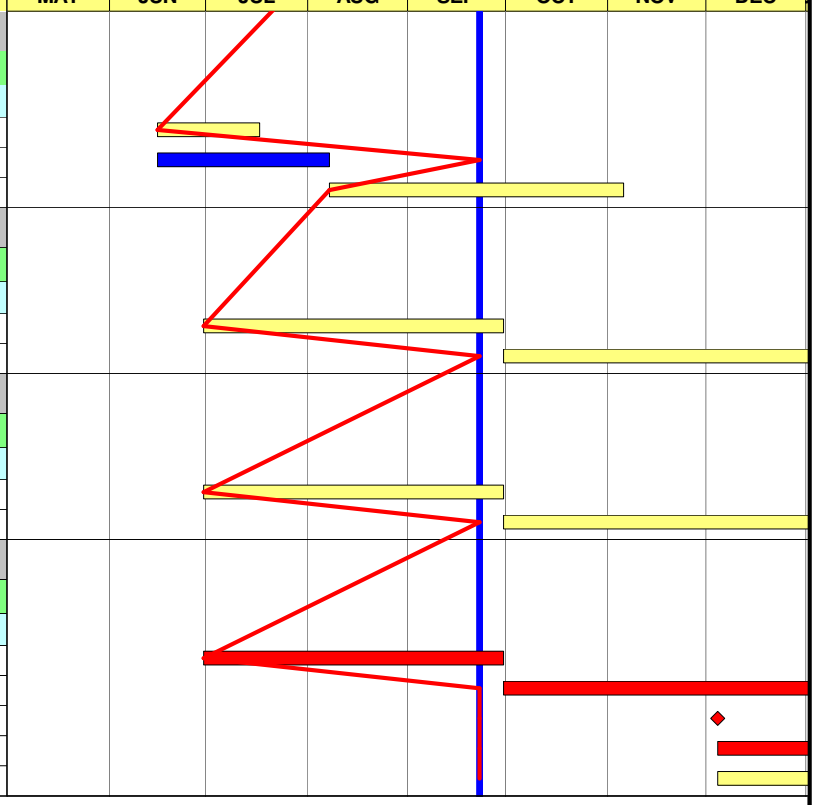
Sheet 5 of 6

Design & Construction of Hong Kong
West Drainage Tunnel
Contract No. DC/2007/10
Works Programme
3 Monthly Rolling Programme
SEP MONTHLY REPORT

Dragages - Nishimatsu Joint Venture

Date	Revision	Checked	Approved
27/SEP/0	10th Monthly Update		
	19Aug08 - 23Sep08		

Activity ID	Activity Description	Current or Forecast Duration	Current or Forecast Early Start	Current or Forecast Early Finish	Baseline Total Float	Progress Total Float as of 23-Sep-08	% Comp
CC35-SECTION 29 OF THE WORKS (PORTION W10)							
Construction							
Preliminary Works							
S290010	Conduct GI & Utility Identification Works - W10	24	23/SEP/08	22/OCT/08	175	100	0
S290015	Conduct Utility Identification Works - W10	41	12/AUG/08A	06/SEP/08A	158		100
S290020	Prepare Utility Diversion Plans - W10	70	23/OCT/08	15/JAN/09	158	100	0
CC36-SECTION 30 OF THE WORKS (PORTION HKU1)							
Construction							
Preliminary Works							
S300010	Prepare Utility Diversion Plans - HKU1	70	23/SEP/08*	15/DEC/08	101	37	0
S300020	Notify,Coord&Obtain Permit-Utility Prov - HKU1	149	16/DEC/08	30/JUN/09	101	37	0
CC37-SECTION 31 OF THE WORKS (PORTION PFLR1)							
Construction							
Preliminary Works							
S310905	Prepare Utility Diversion Plans - PFLR1	70	23/SEP/08*	15/DEC/08	74	10	0
S310915	Notify,Coord&Obtain Permit-Utility Prov - PFLR1	149	16/DEC/08	30/JUN/09	74	10	0
CC38-SECTION 32 OF THE WORKS (PORTION SM1)							
Construction							
Preliminary Works							
S320905	Prepare Utility Diversion Plans - SM1	70	23/SEP/08*	15/DEC/08	39	-25	0
S320915	Notify,Coord&Obtain Permit-Utility Prov - SM1	149	16/DEC/08	30/JUN/09	39	-25	0
S320920	Notify SO for Portion Possession - SM1)	0		04/DEC/08*	0	0	0
S320930	25 wks prior to Portion Possess Date-(SM1)	175	05/DEC/08	28/MAY/09	0	0	0
S320932	Obtain permit Install Env Base Monitor Inst(SM1)	24	05/DEC/08	05/JAN/09	73	73	0



Start Date	23/NOV/07
Finish Date	08/FEB/12
Data Date	23/SEP/08
Run Date	27/SEP/08 14:49

Target Bar
Progress Bar
Critical Activity

809A

Sheet 6 of 6

Design & Construction of Hong Kong
West Drainage Tunnel
Contract No. DC/2007/10
Works Programme
3 Monthly Rolling Programme
SEP MONTHLY REPORT

Date	Revision	Checked	Approved
27/SEP/0	10th Monthly Update		
	19Aug08 - 23Sep08		

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	• AQ1 (True Light Middle School of Hong Kong) • AQ2 (Outside Aegean Terrace)	AQ1 – Canopy AQ2 – Roadside AQ3 – Roadside
	24 hour TSP	Once / 6 days	• AQ1 (True Light Middle School of Hong Kong) • AQ3 (Outside Site Office at Western Portal)	

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Noise	L_{eq}, L_{90} & L_{10} at 30 minute intervals during (0700 to 1900 on normal weekdays)	Once per week	• NC1 (True Light Middle School of Hong Kong) • NC2 (The Legend) • NC3 (Outside Aegean Terrace)	• NC1 - Facade measurement • NC2 - Facade measurement • NC3 - Facade measurement
	L_{eq}, L_{90} & L_{10} at 5 minute intervals during (1900 to 2300)[(1)]	Once per week (include 3 consecutive 5-min measurements)		
	L_{eq}, L_{90} & L_{10} at 5 minute intervals during (2300 to 0700 of next day)[(1)]	Once per week (include 3 consecutive 5-min measurements)		
	L_{eq}, L_{90} & L_{10} at 5 minute intervals during (0700 to 2300 on holidays)[(1)]	Once per week (include 3 consecutive 5-min measurements)		

Remarks:

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

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Water Quality	• 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	• CE (830026E, 814956N) • CF (831778E, 812420N) • I1 (831088E, 813654N) • I2 (831105E, 813582N) • Intake A (831603E, 813044N) • Intake B (830606E, 814583N)	• 3 water depths except CF, 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, $\mu g/m^3$	Limit Level, $\mu g/m^3$
AQ1	345	500
AQ2	321	

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

Location	Action Level, $\mu g/m^3$	Limit Level, $\mu g/m^3$
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)

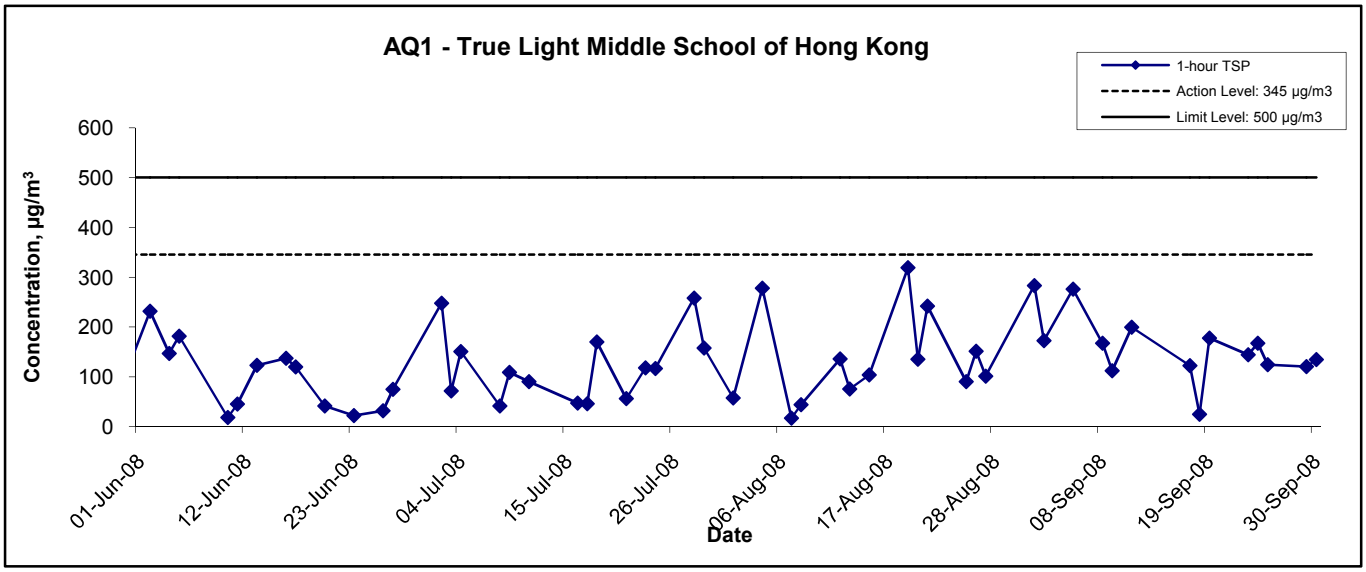
(*) reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.
(**) to be selected based on Area Sensitivity Rating.

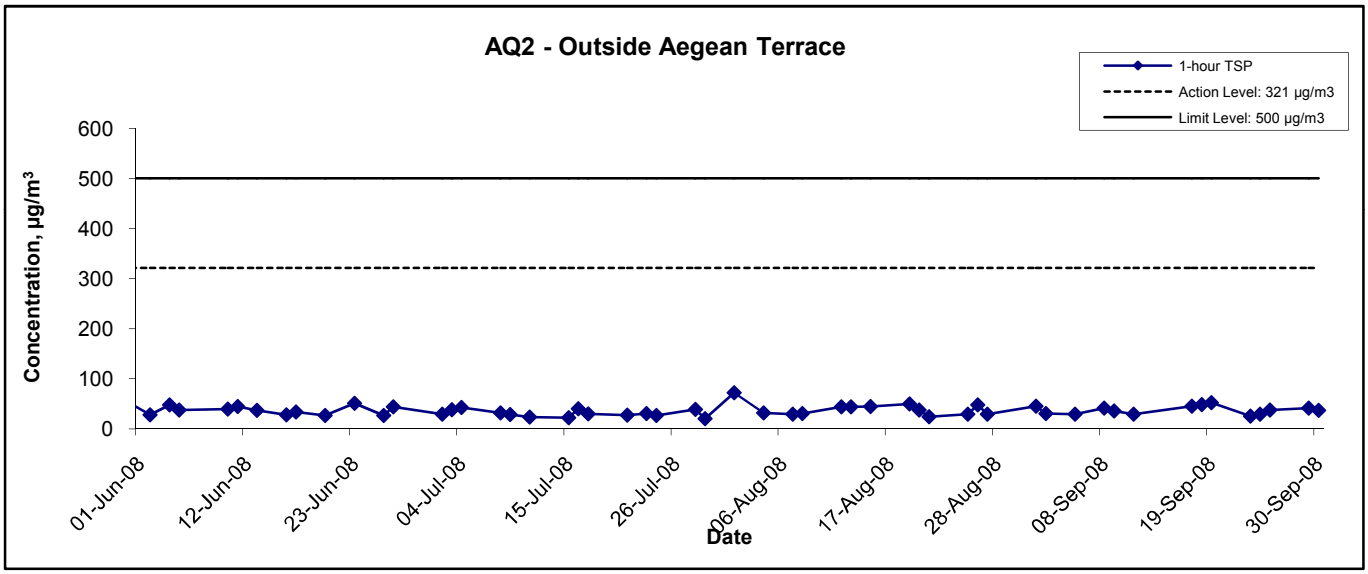
Table C-4 Action and Limit Levels for Water Quality

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

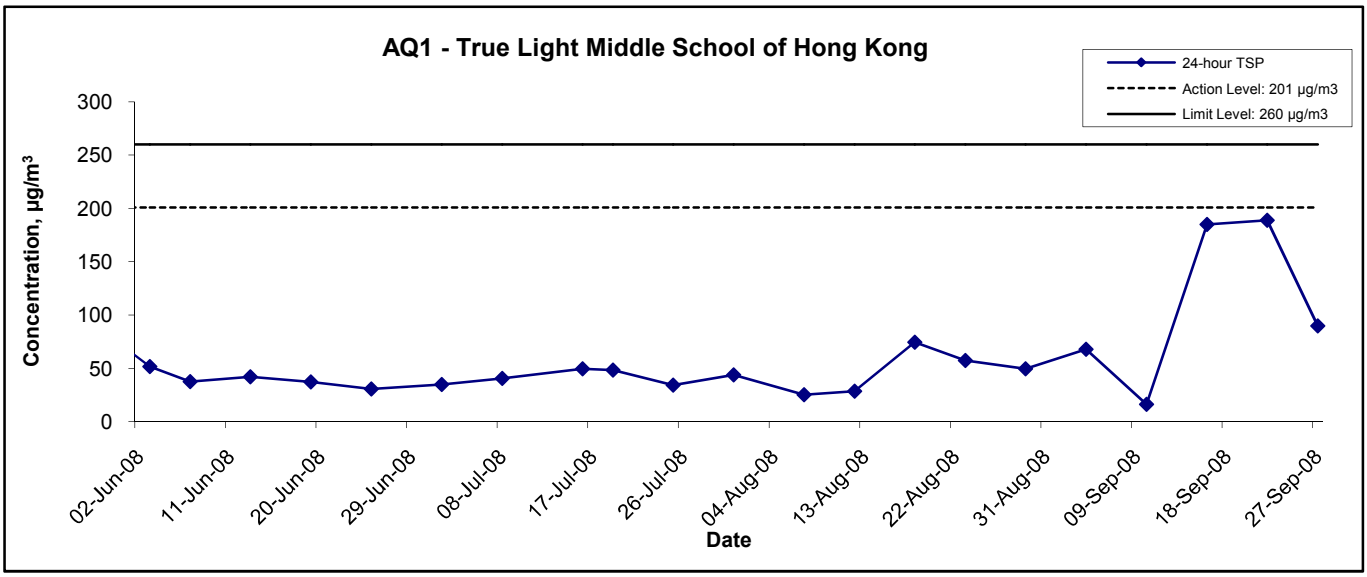
1-hr TSP Concentration Levels

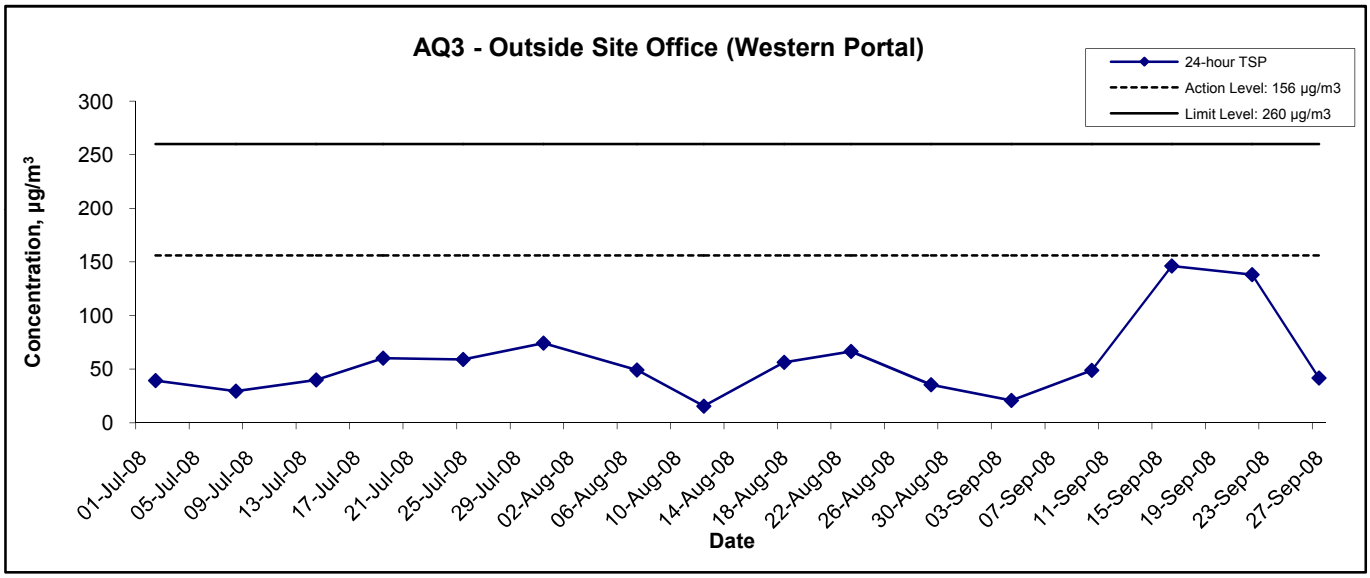




Title: Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of 1-hour TSP Monitoring Results	Scale: N.T.S Date: Sep 08	Project No.: MA8001 Appendix: D	CINOTECH

24-hr TSP Concentration Levels

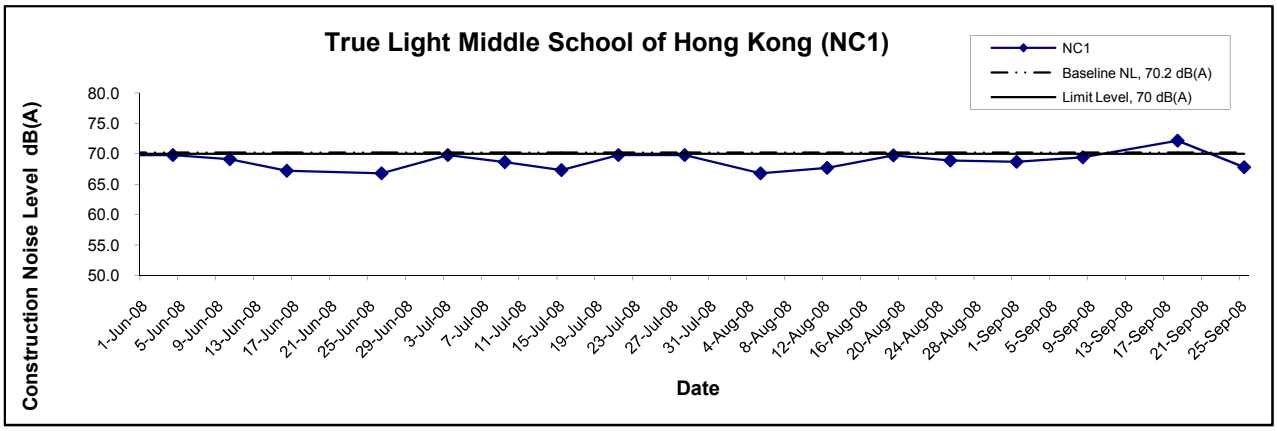


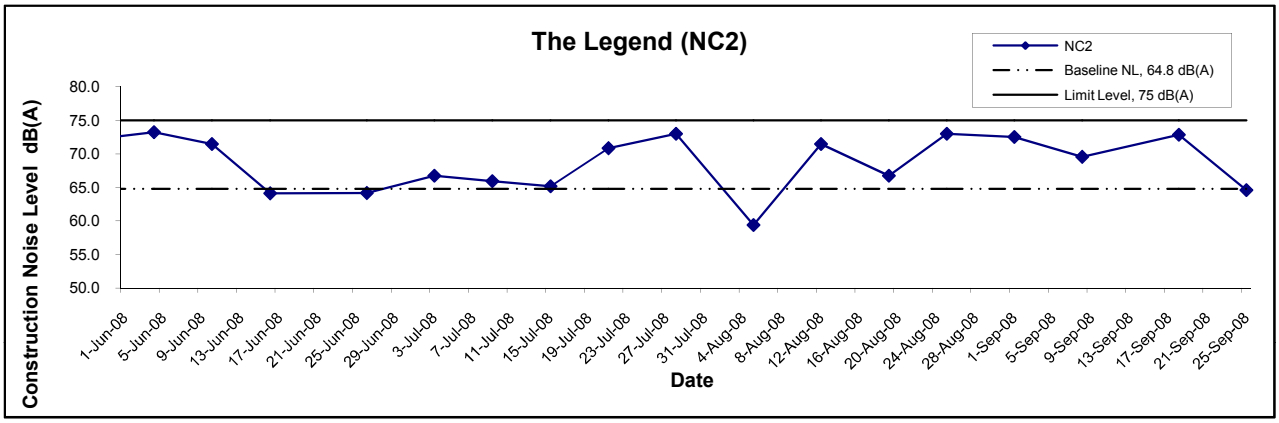


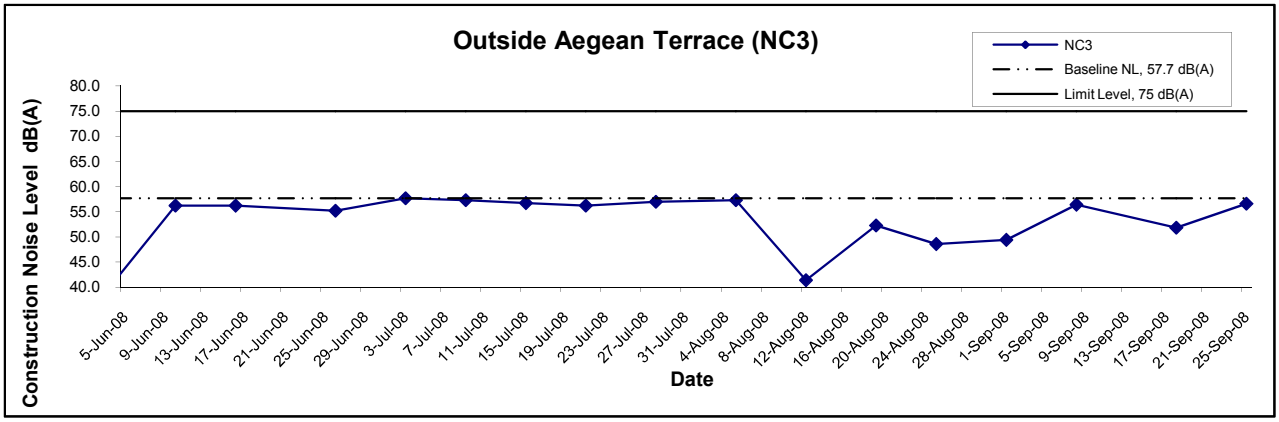
Title: Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Sep 08	Project No.: MA8001 Appendix: D	CINOTECH

APPENDIX E
GRAPHICAL PRESENTATION OF NOISE MONITORING RESULTS

Noise Levels



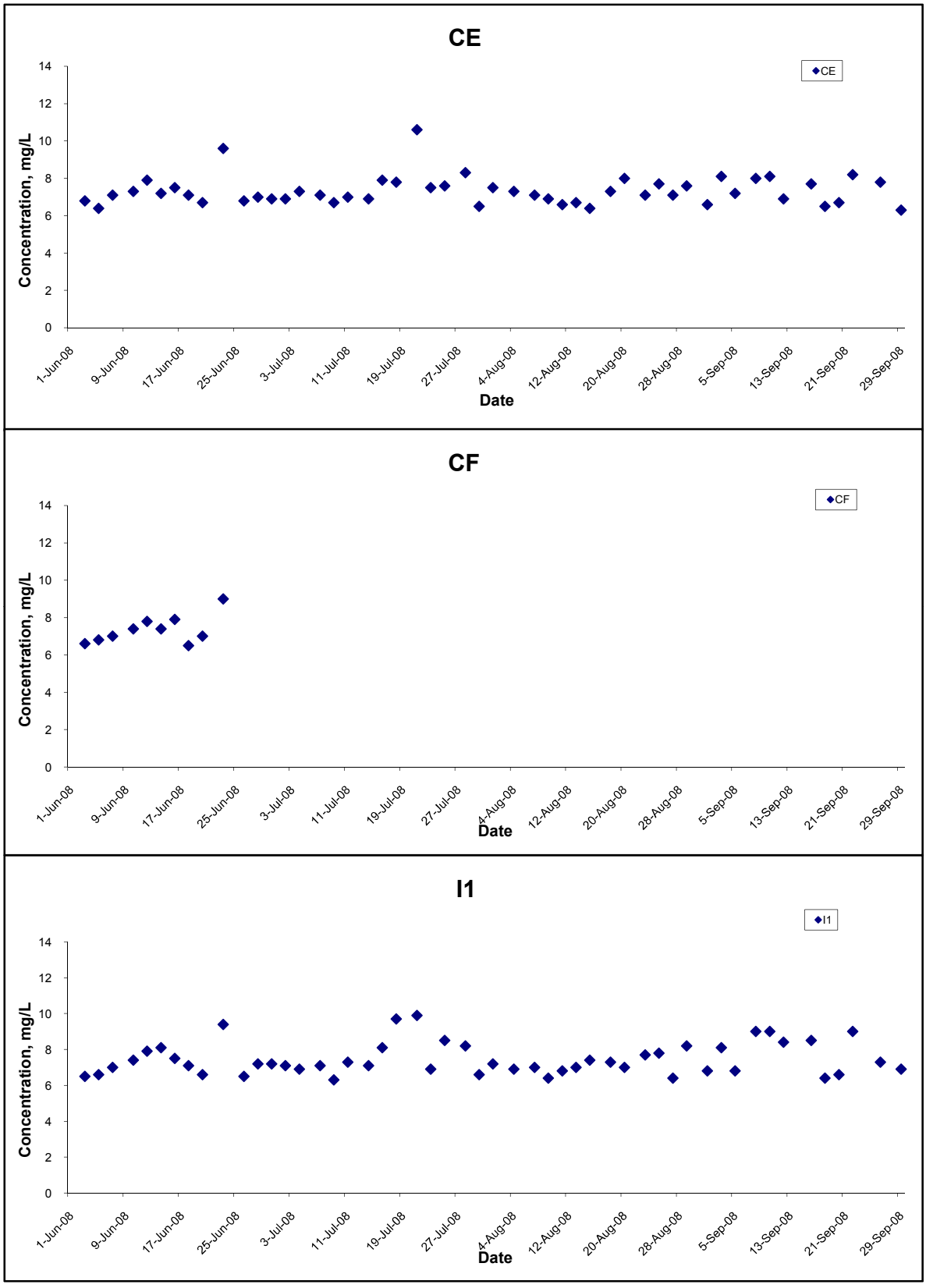




Title: Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale: N.T.S Date: Sep 08	Project No.: MA8001 Appendix: E	CINOTECH

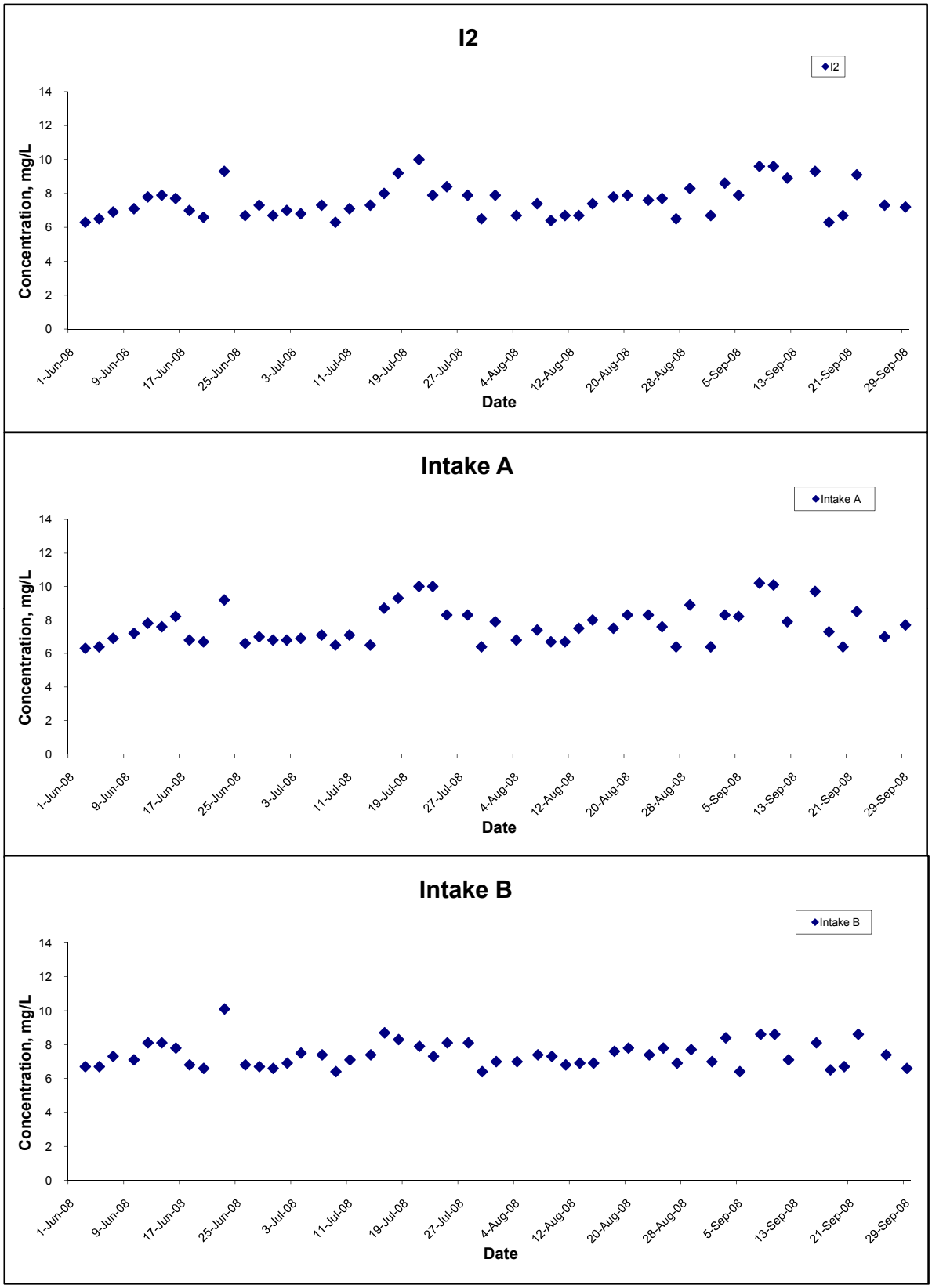
APPENDIX F
GRAPHICAL PRESENTATION OF WATER QUALITY MONITORING RESULTS

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	CINOTECH
	Date: Sep 08	Appendix: F	

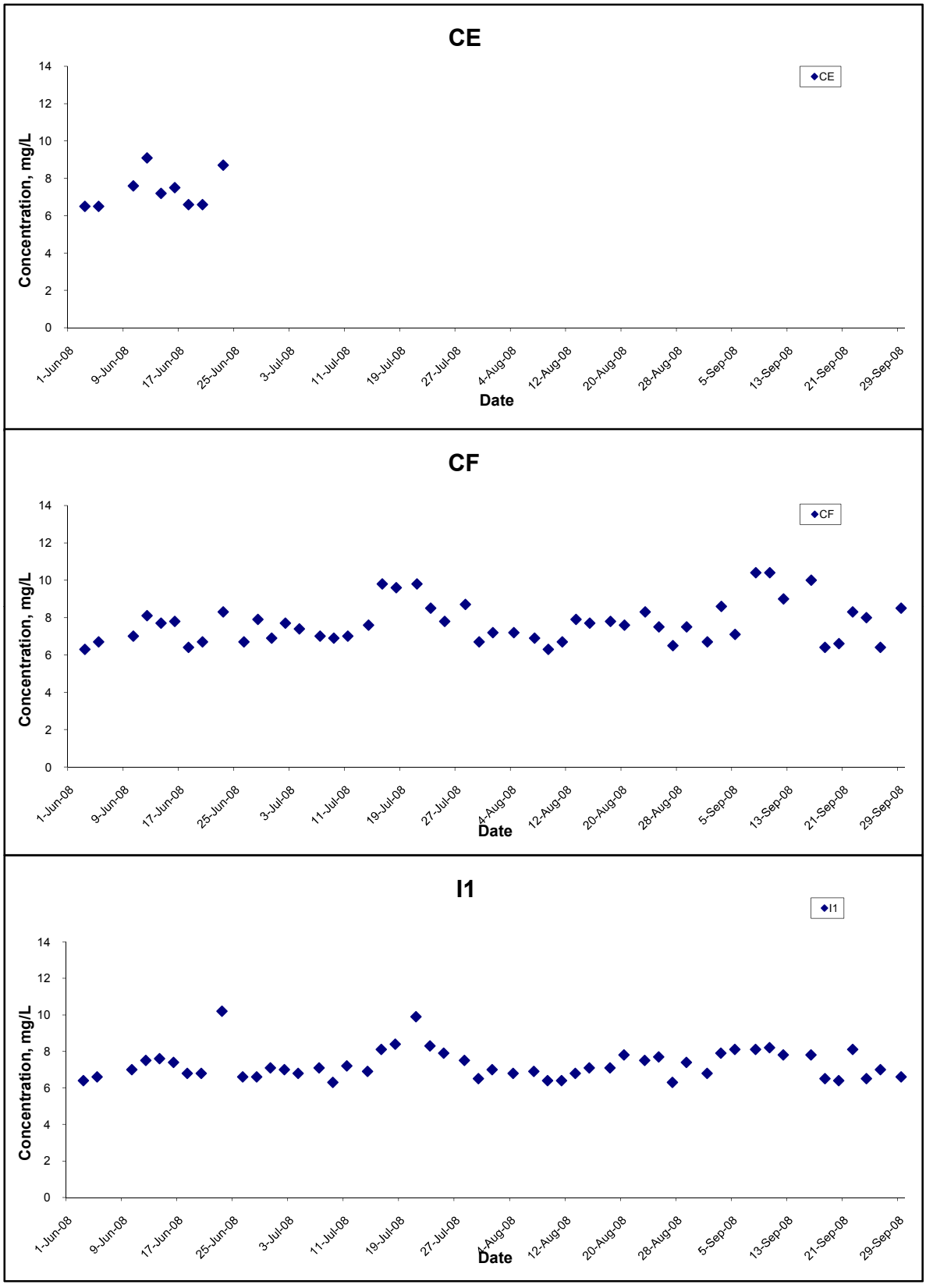
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



Title: Graphical Presentation of Water Quality Monitoring Results	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel	Scale: N.T.S Date: Sep 08	Project No.: MA8001 Appendix: F

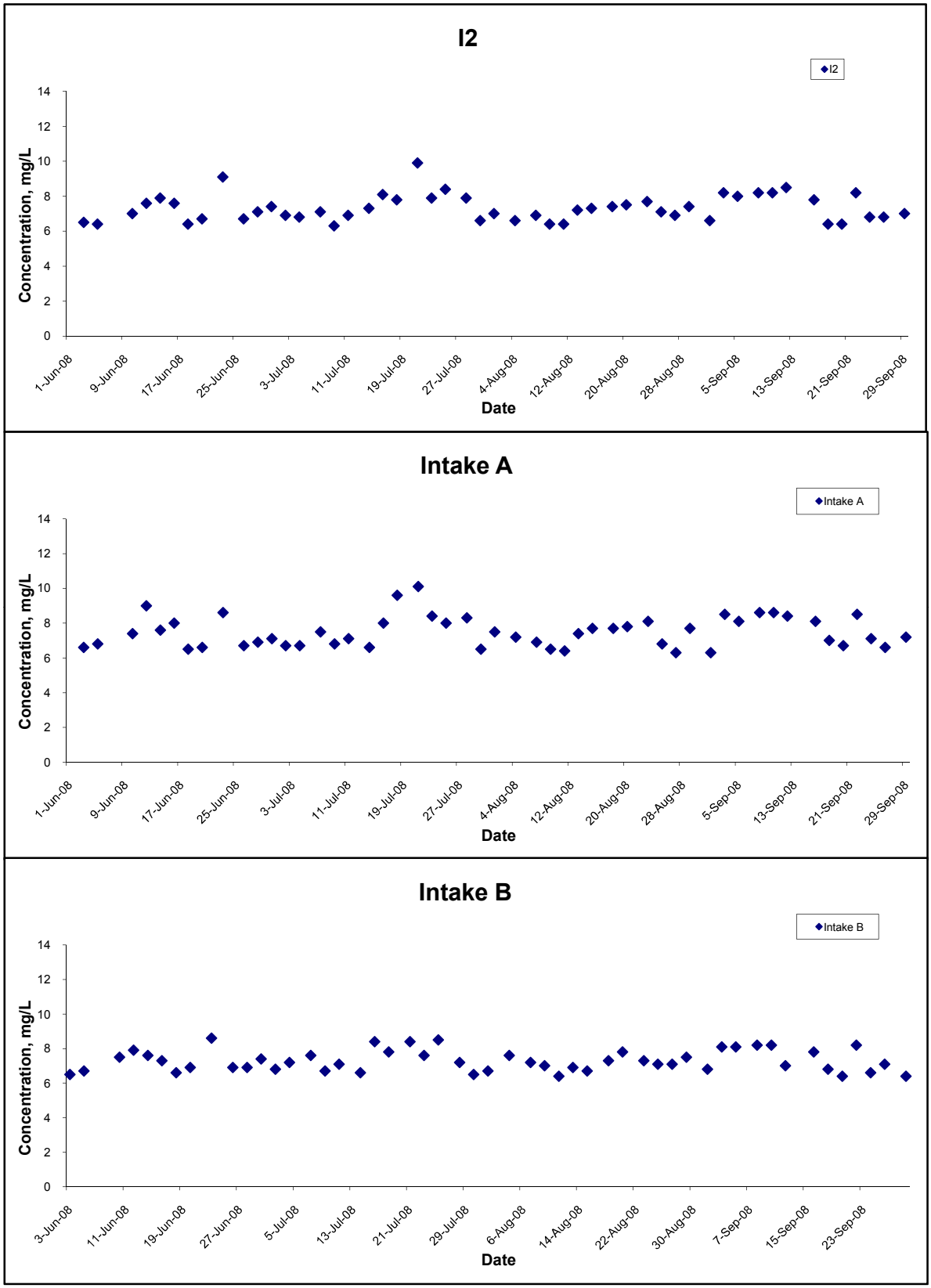
CINOTECH

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



Title		Scale	Project No.	
	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel	N.T.S	MA8001	CINOTECH
	Graphical Presentation of Water Quality Monitoring Results	Date: Sep 08	Appendix: F	

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



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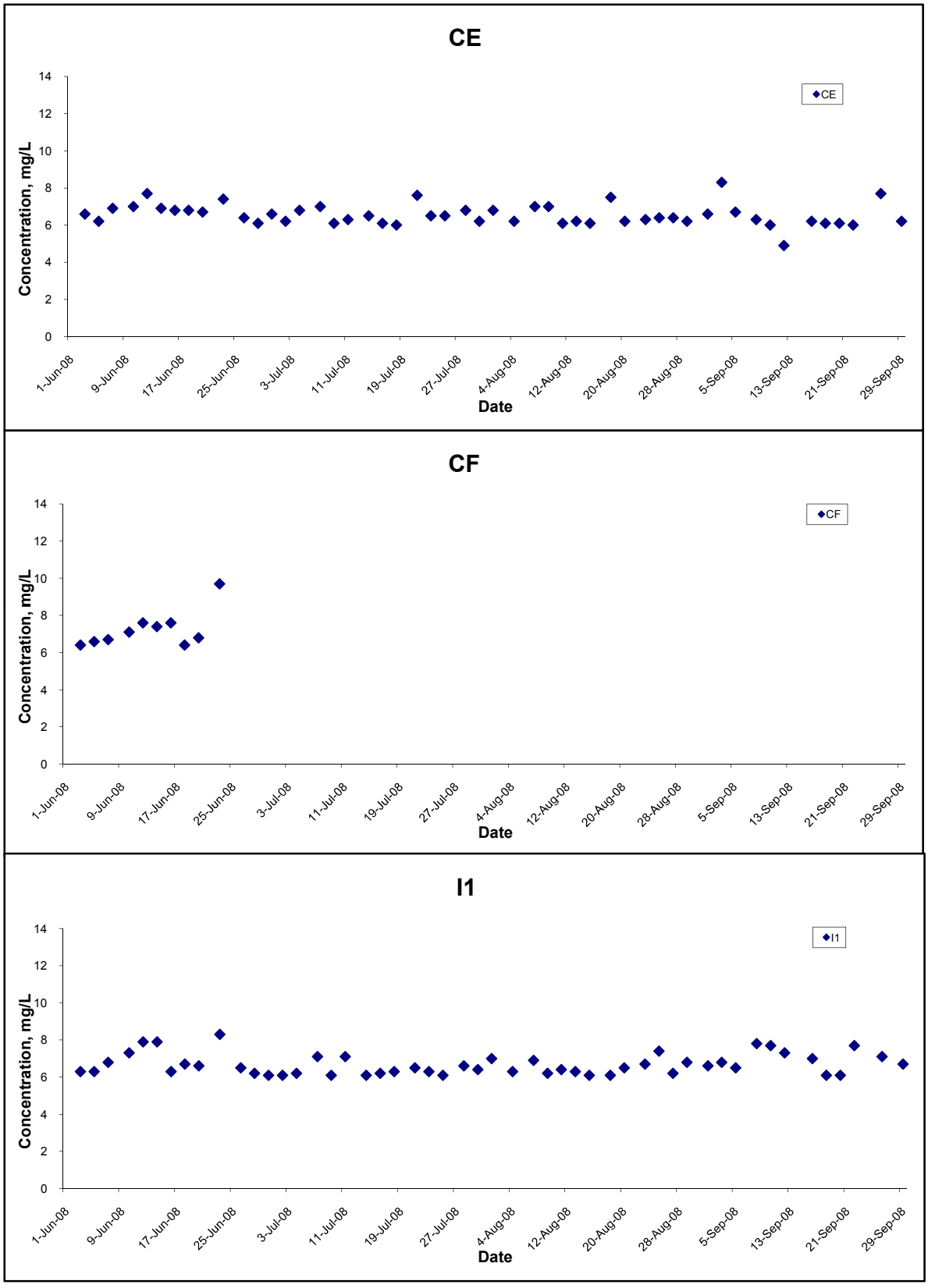
	Date: Sep 08	Appendix: F	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



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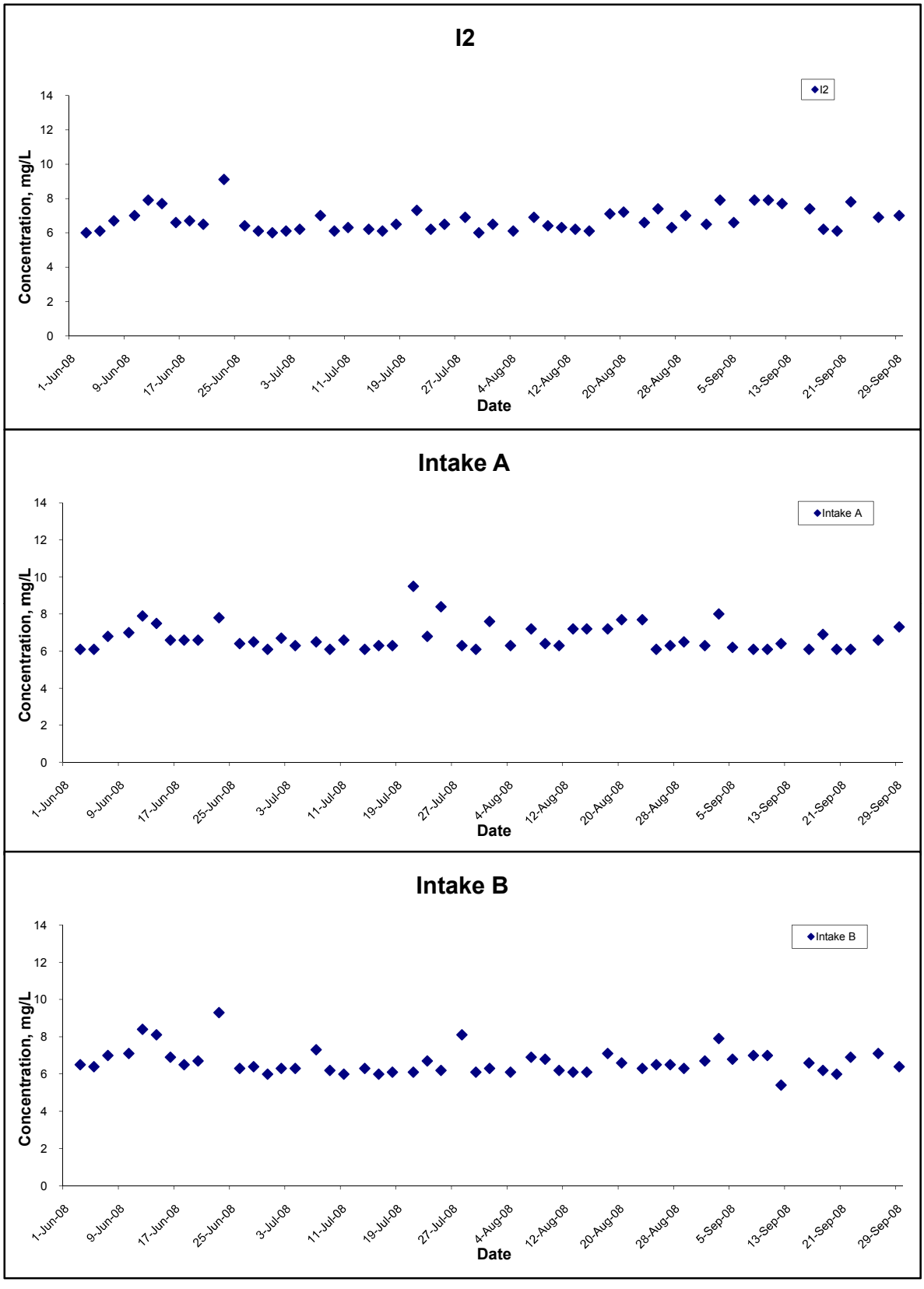
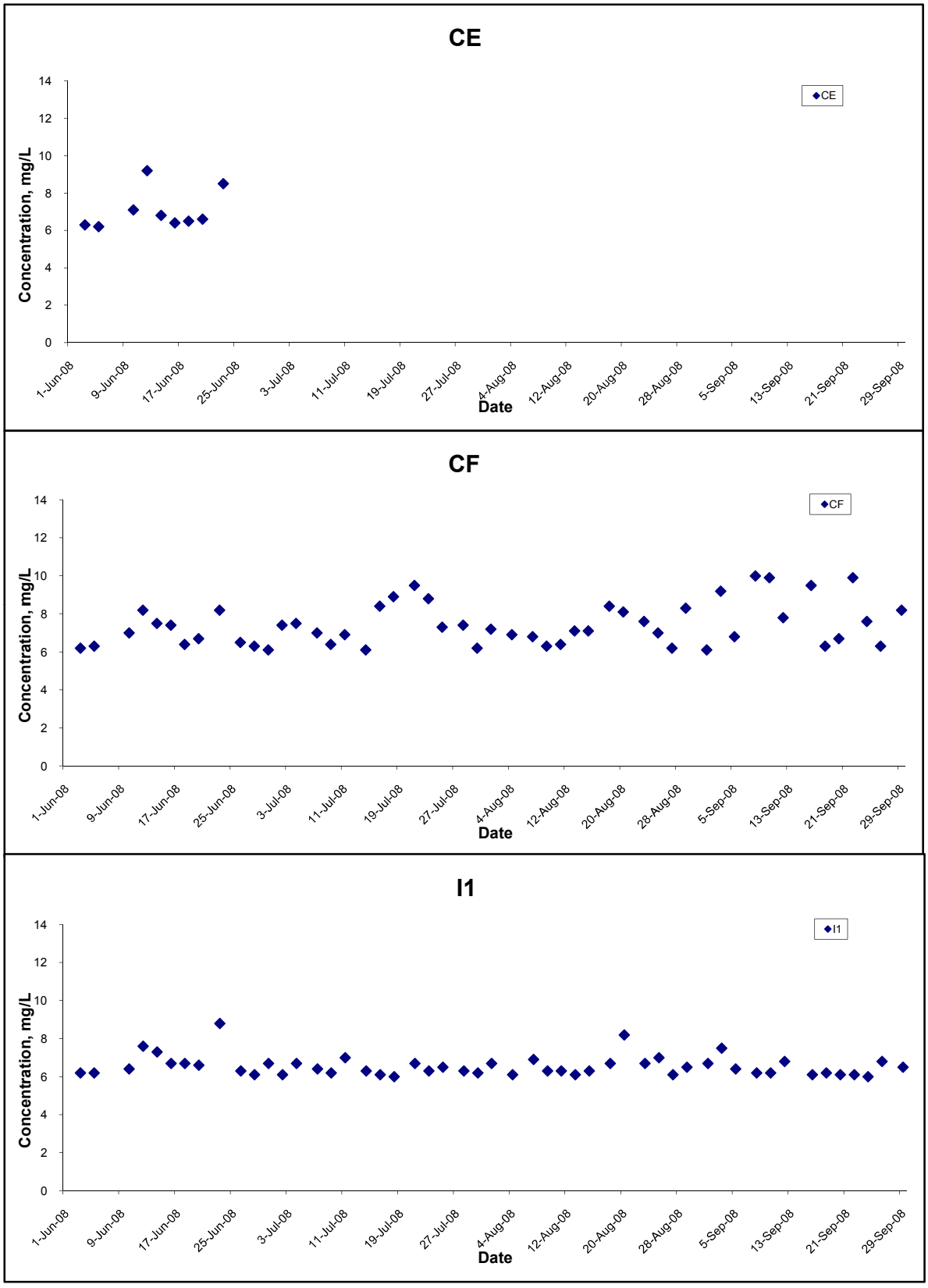
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



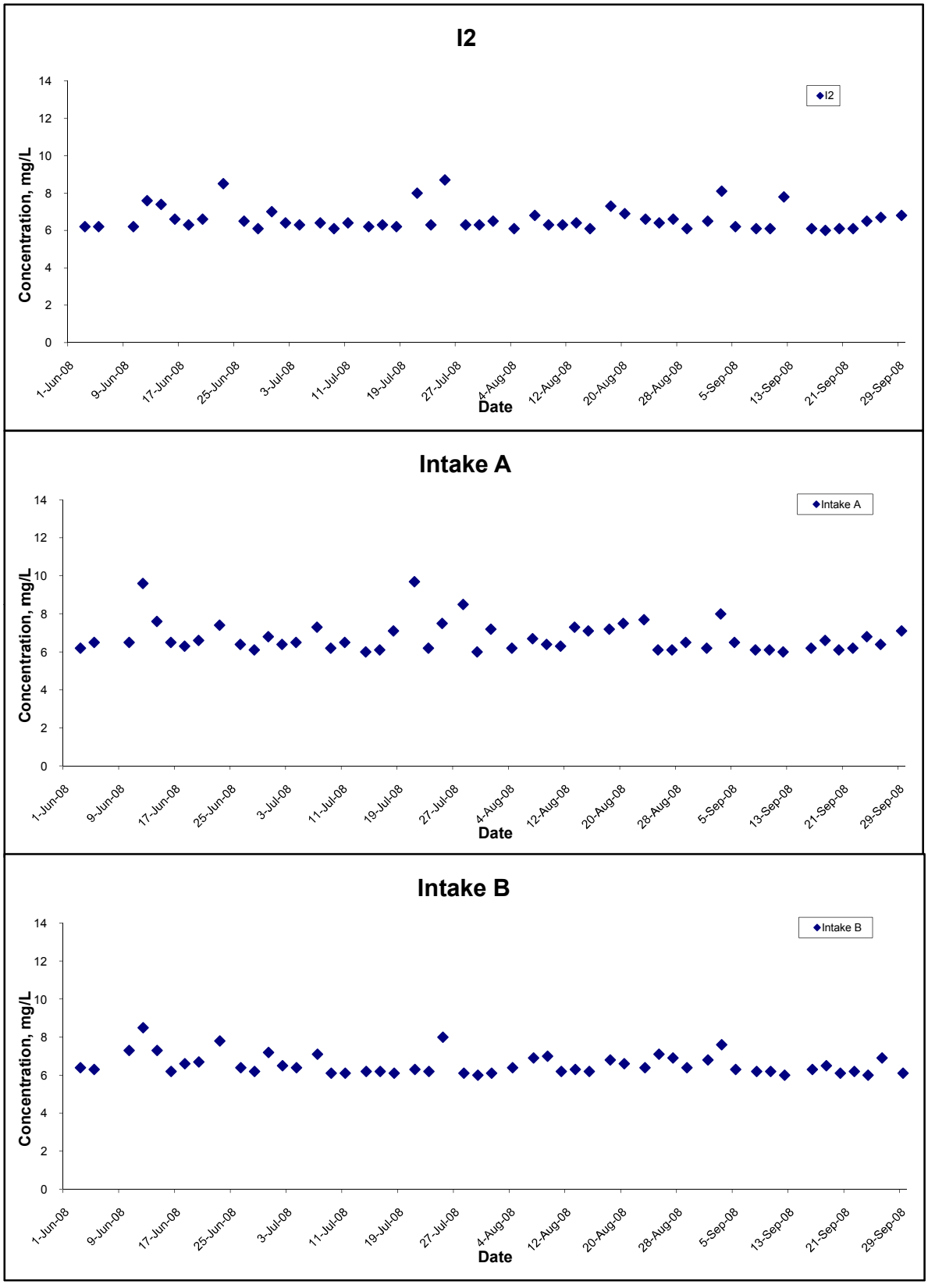
Title: Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA8001	CINOTECH
	Date: Sep 08	Appendix: F	

Dissolved Oxygen (Bottom) at Mid-Flood Tide



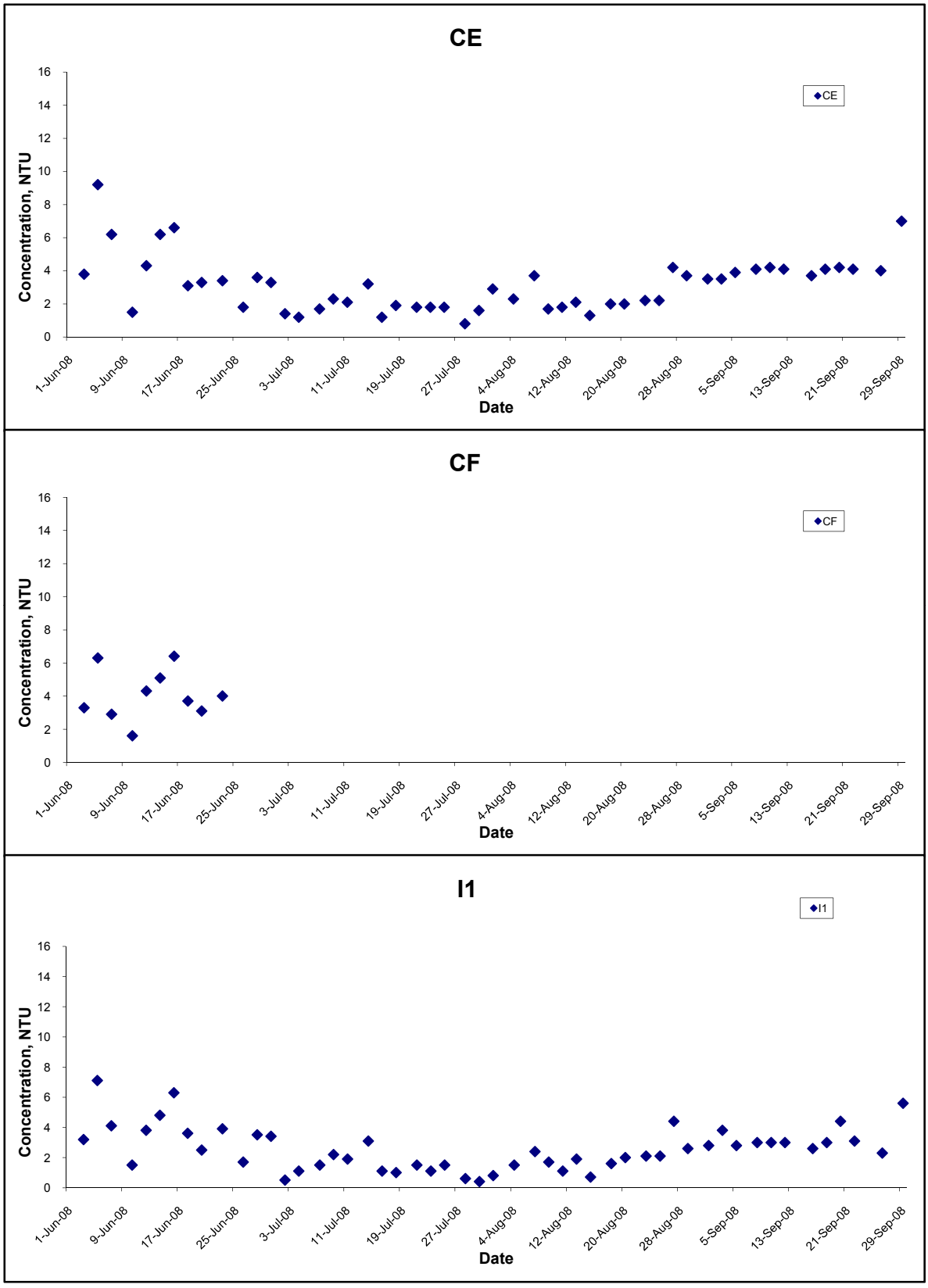
Title: Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S Date: Sep 08	Project No.: MA8001 Appendix: F	CINOTECH

Dissolved Oxygen (Bottom) at Mid-Flood Tide



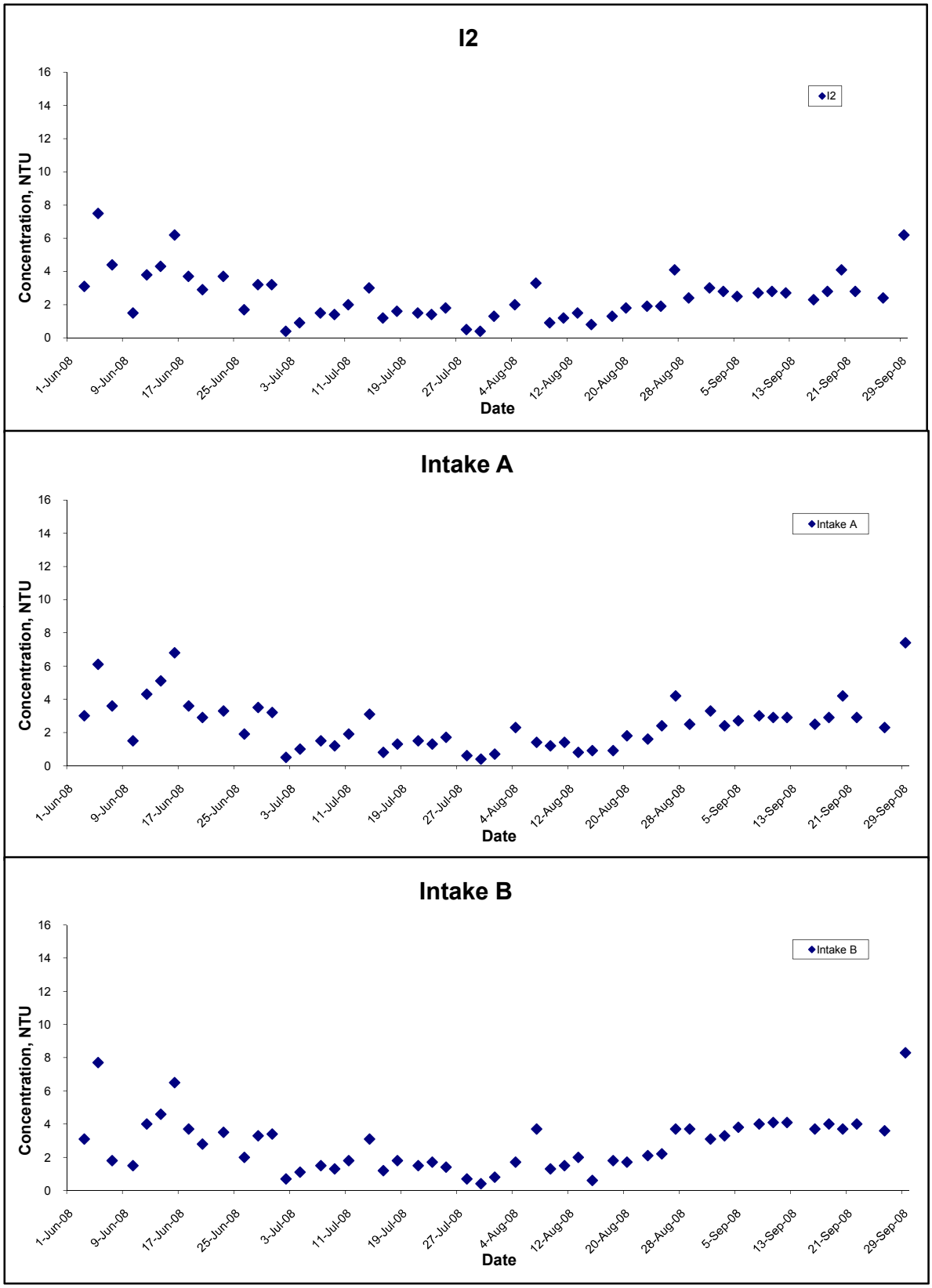
Title	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA8001	CINOTECH
		Date: Sep 08	Appendix: F	

Turbidity (Depth-averaged) at Mid-Ebb Tide



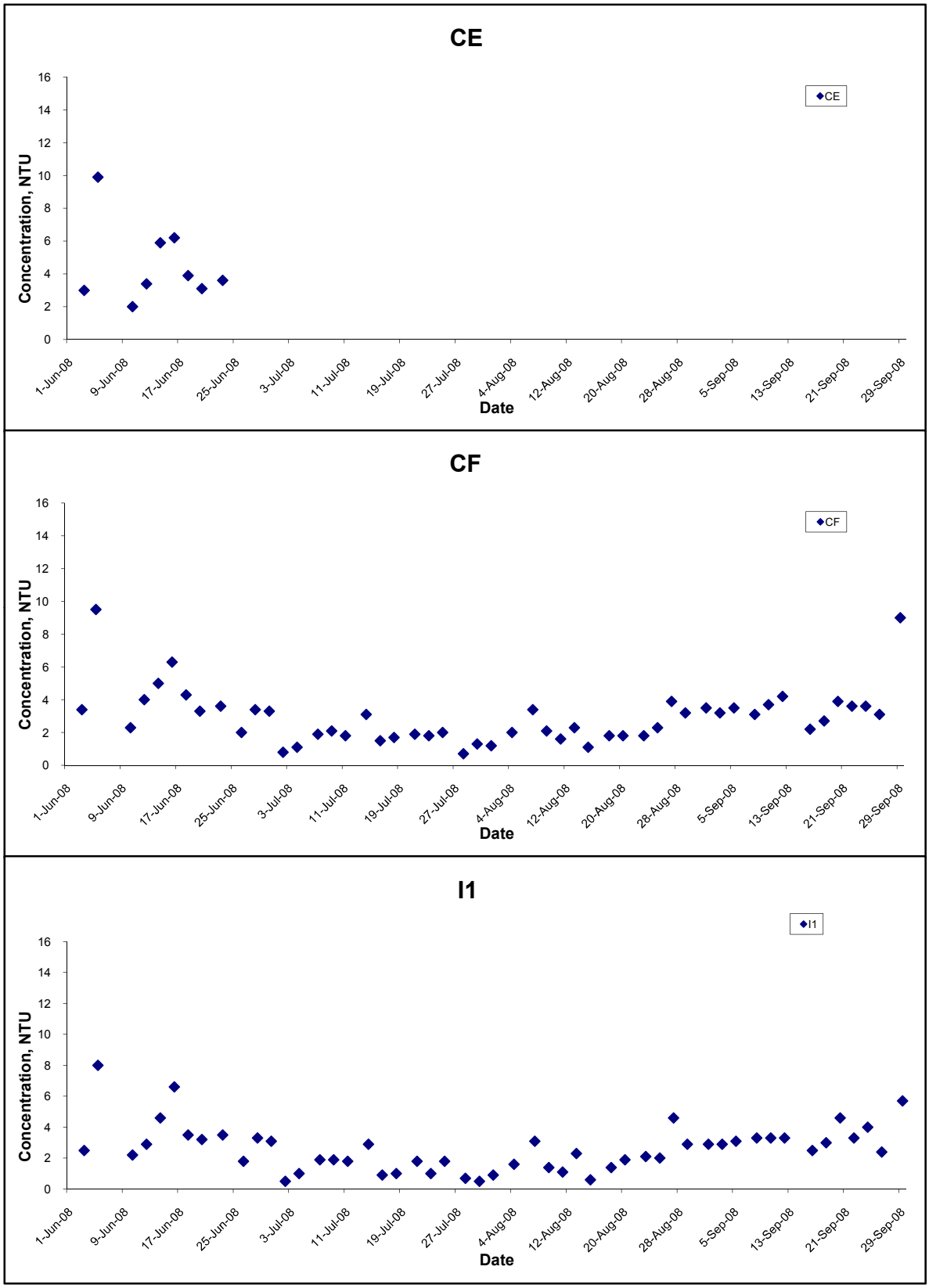
Title: Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Water Quality Monitoring Results	Scale: N.T.S	Project No.: MA8001	CINOTECH
	Date: Sep 08	Appendix: F	

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
	Date: Sep 08	Appendix: F	

Turbidity (Depth-averaged) at Mid-Flood Tide



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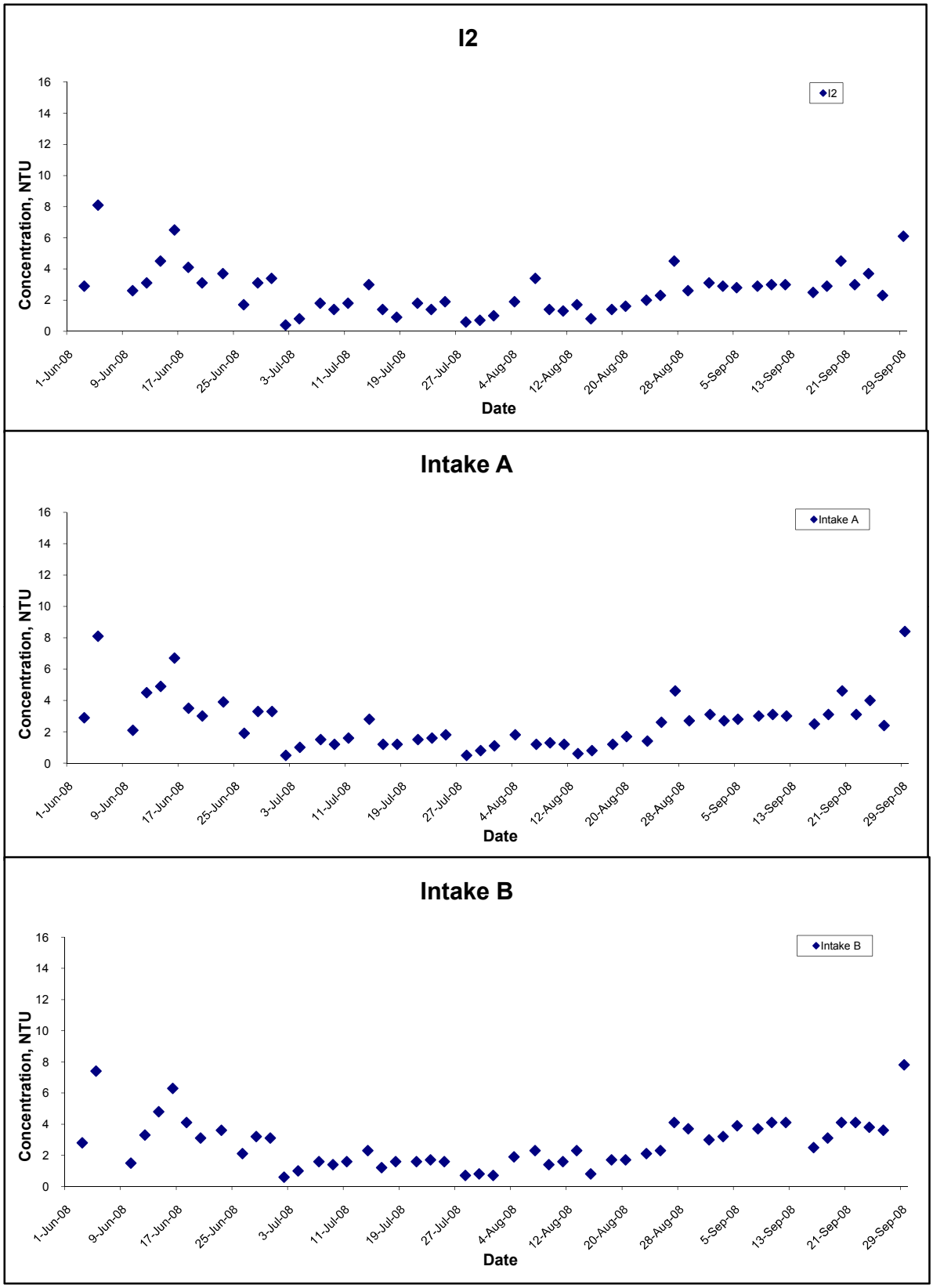
	Date: Sep 08	Appendix: F	

Turbidity (Depth-averaged) at Mid-Flood Tide



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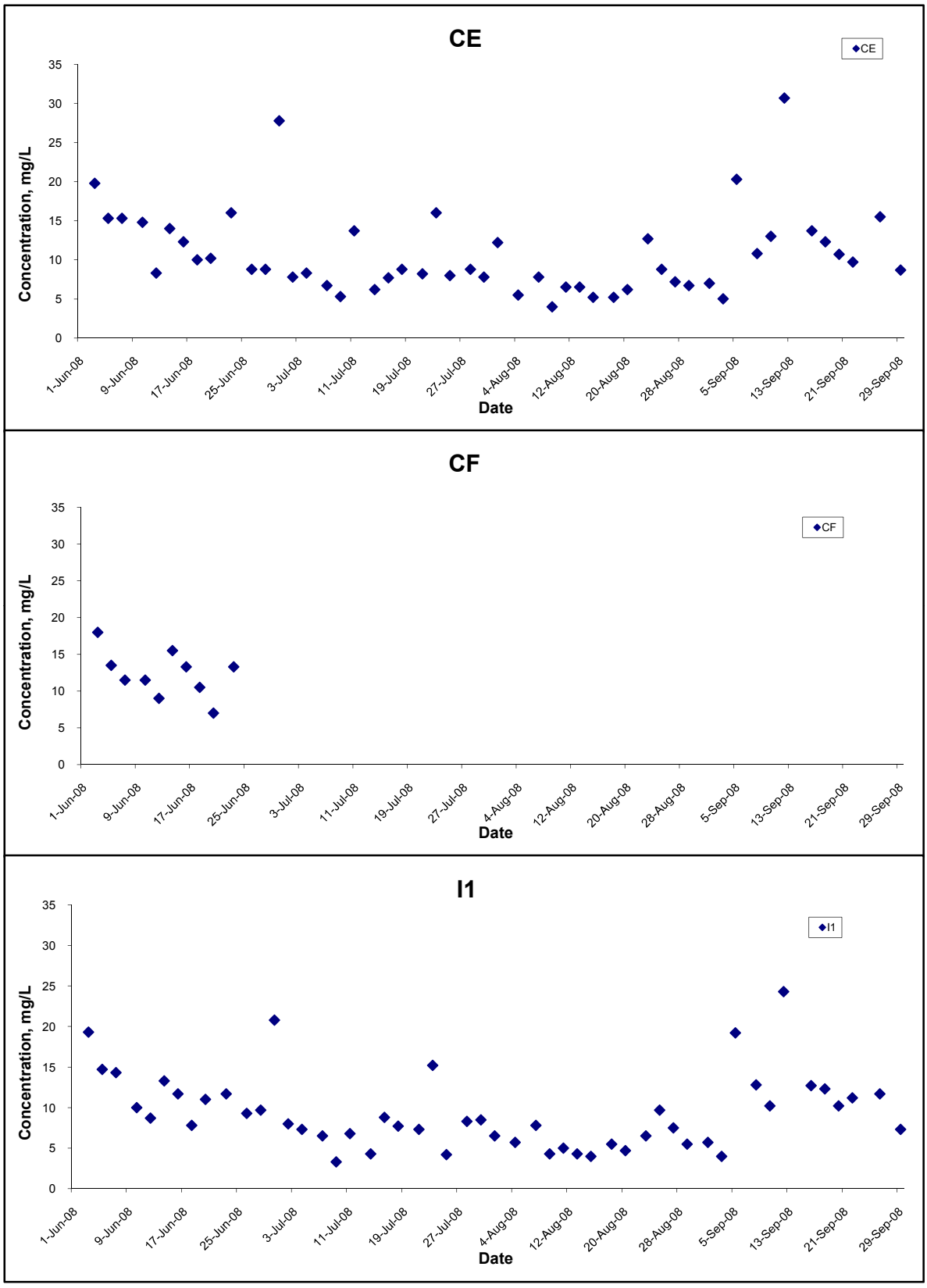
	Date: Sep 08	Appendix: F	

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



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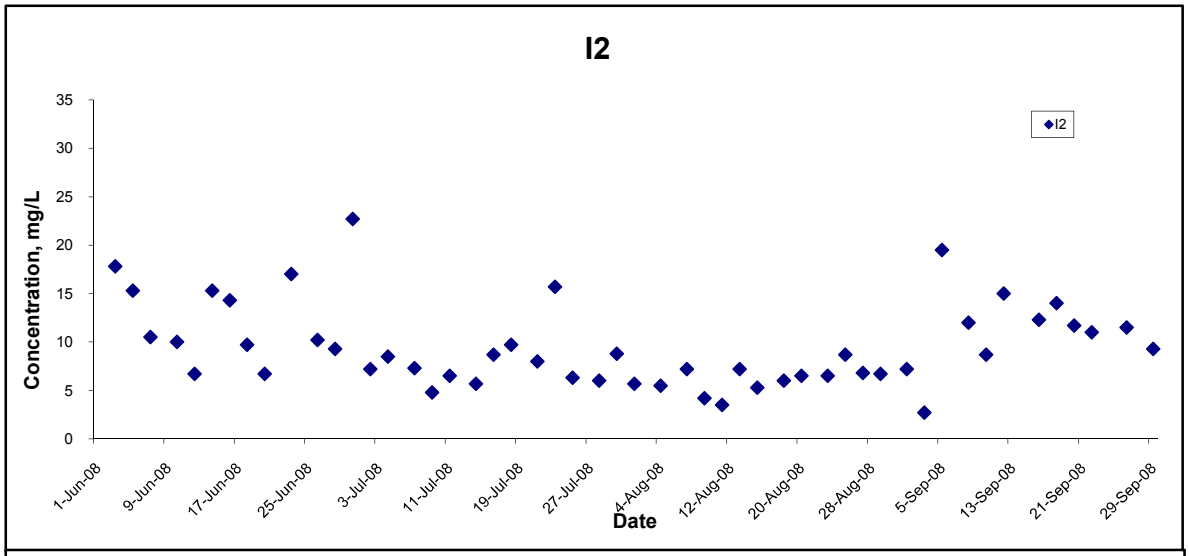
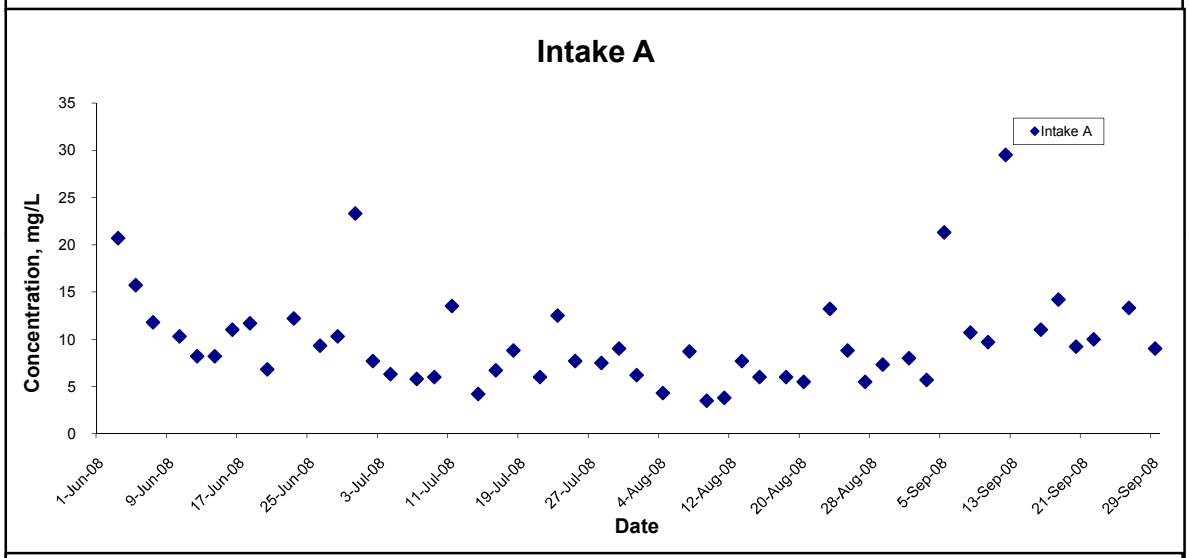
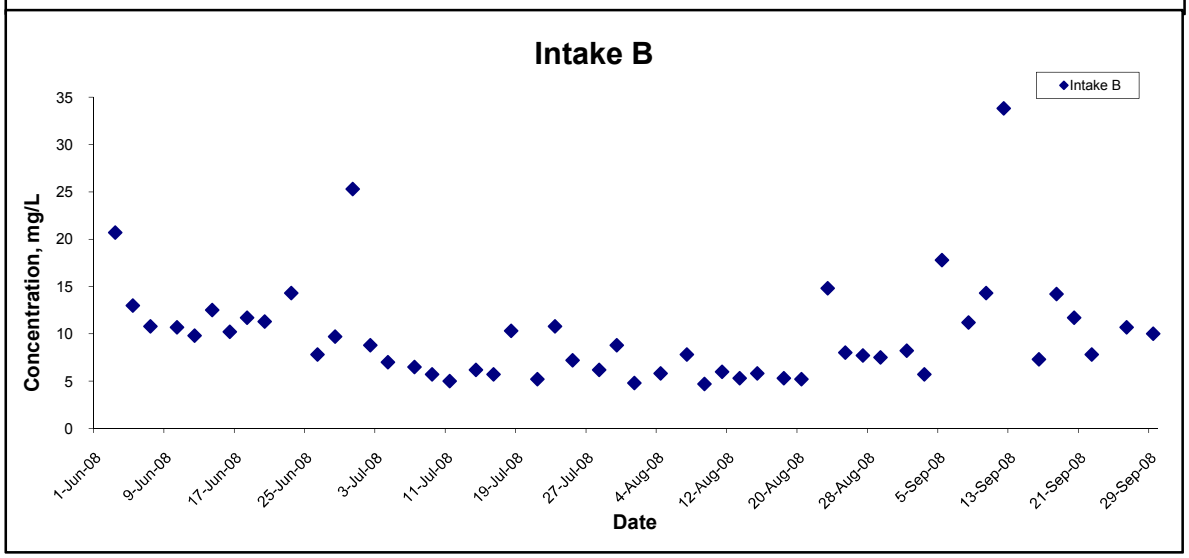
	Date: Sep 08	Appendix: F	

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

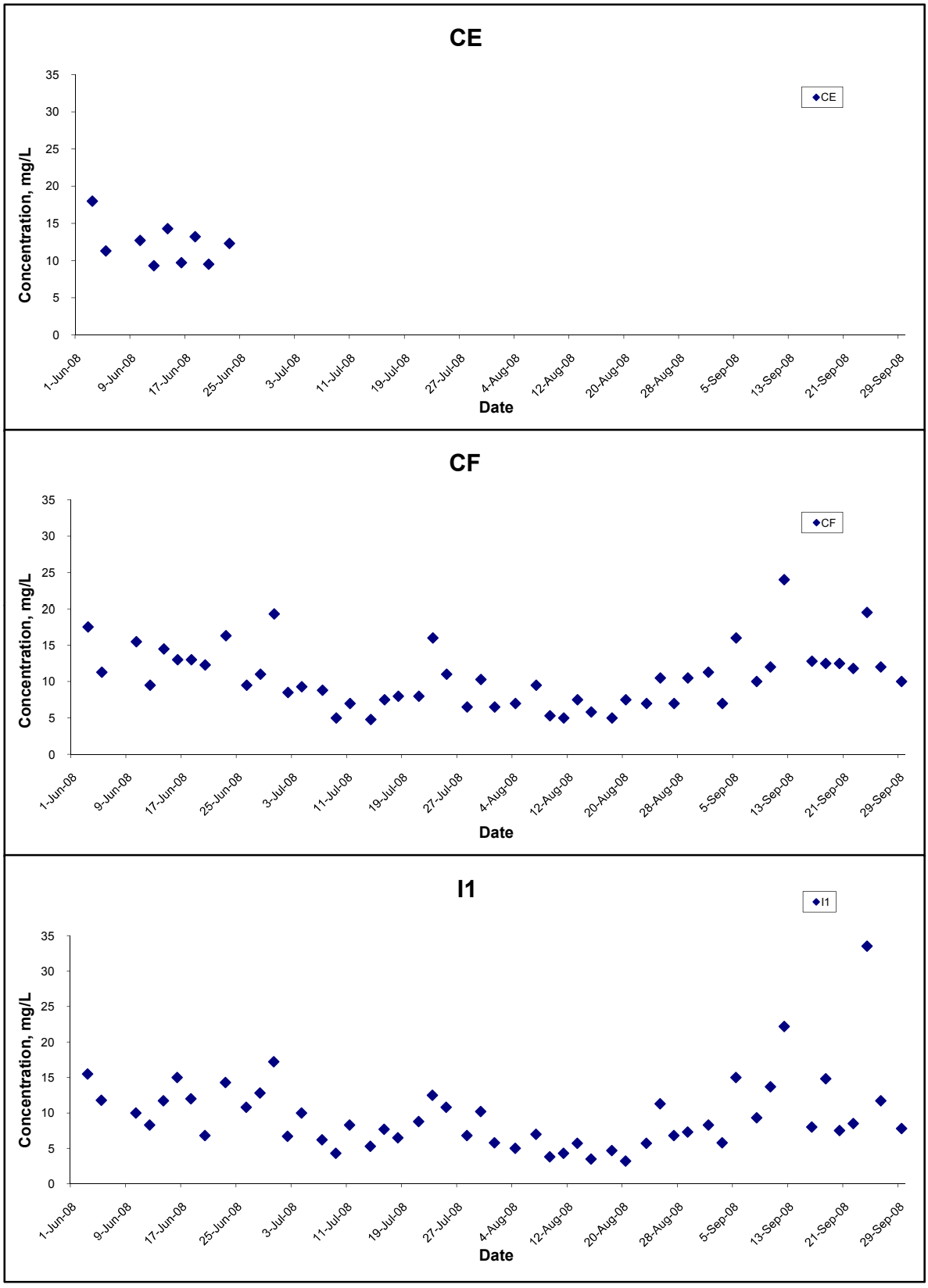






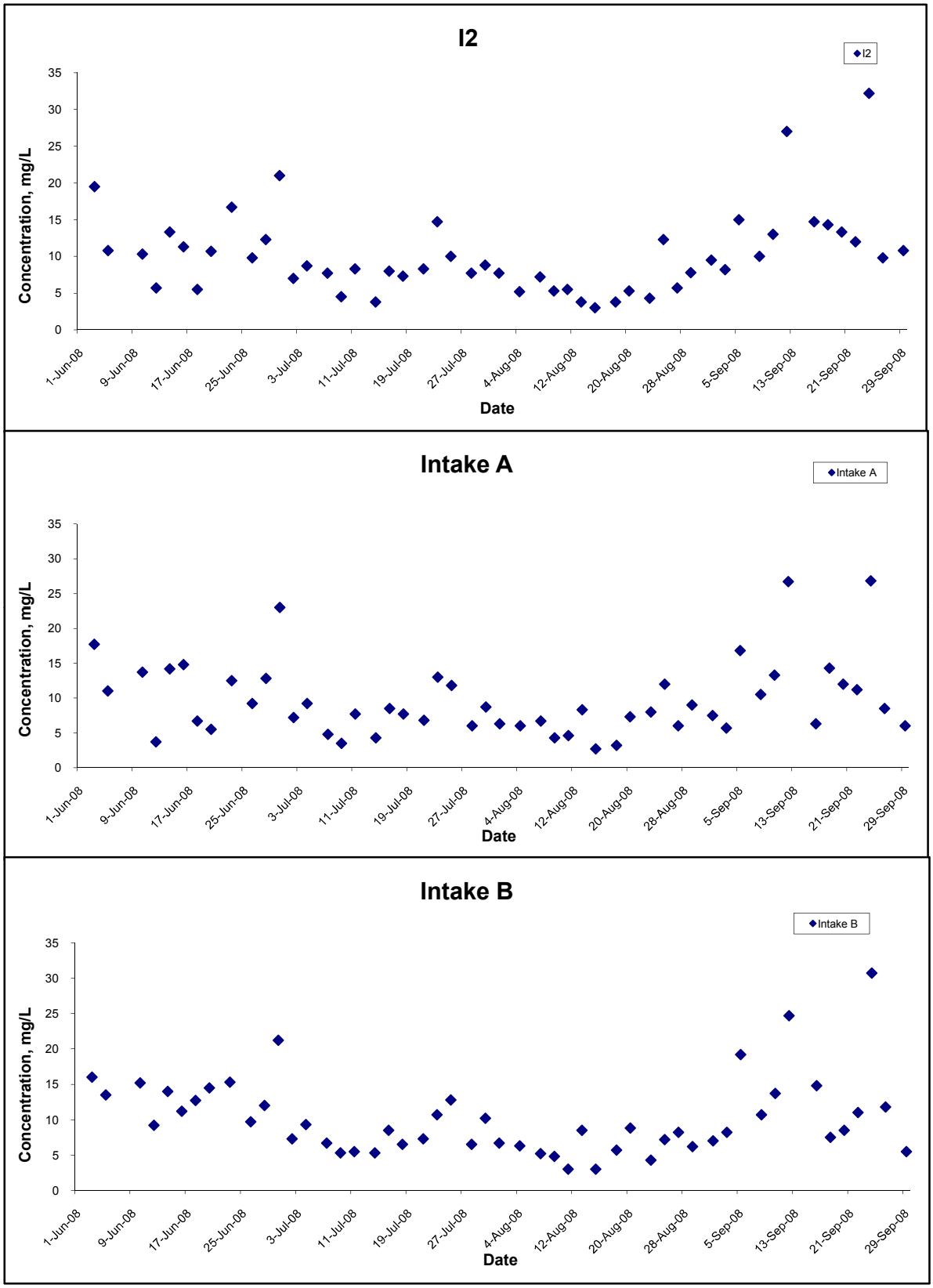
Title		Scale	Project No.	
	Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel	N.T.S	MA8001	CINOTECH
	Graphical Presentation of Water Quality Monitoring Results	Date: Sep 08	Appendix: F	

Suspended Solids (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
	Date: Sep 08	Appendix: F	

Suspended Solids (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
	Date: Sep 08	Appendix: F	

APPENDIX G
ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

Appendix G - Summary of Environmental Mitigation Implementation Schedule

Types of Impacts	Mitigation Measures	Status
Construction Dust	*Dust Mitigation Measures*	
	• 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.	^
	• 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).	^
	• 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.	*
	• A watering programme of once every 2 hours in normal weather conditions, and hourly in dry/windy conditions.	*
	• 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.	*
	• 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.	N/A
	• 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.	N/A
	• The heights from excavated spoils are dropped should be minimise to reduce the fugitive dust arising from unloading/loading.	^
	• 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.	^
	• 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.	^
	• 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.	^
	• Chemical wetting agents shall only be used on completed cuts and fills to reduce wind erosion.	N/A

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Types of Impacts	Mitigation Measures	Status
	• 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.	^
	In addition, based on the *Air Pollution Control (Construction Dust) Regulation*, any works involved regulatory and notifiable works, such as stockpiling, loading and unloading of dusty materials, shall take precautions to suppress dust nuisance.	
	• 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 $20m^3$) 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 Air Pollution Control (Construction Dust). Regulation, where appropriate, should be adopted.	^

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Types of Impacts	Mitigation Measures	Status
Construction Noise	*Air borne noise* In general, potential construction noise impact can be minimized or avoided by imposing a combination of the following mitigation measures: • 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 of 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	^ ^ N/A ^ ^ ^ ^ ^ * ^

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	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. • 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/m^2. • 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). 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. <u>Level 2 Use of Barriers</u> 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. 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). 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/m^2. 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. 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/m^2) located close to the operating PME. 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.	^ ^ ^ ^ N/A ^ ^ ^

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Types of Impacts	Mitigation Measures	Status
	No construction activity is recommended during the examination period. <u>*Ground borne noise*</u> 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. Public relationship strategy with 24-hour hotline system.	^ N/A

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Water Quality	<u>Precautionary measures for construction work near natural streams</u> 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: • 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. • 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. • 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. • 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> A refuse collection vessel shall be provided to collect refuse or materials lost into the sea. 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.	^ ^ ^ ^ * ^ *

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Types of Impacts	Mitigation Measures	Status
	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).	^
	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, putrescibes, organic wastes and toxic materials and when required a refuse collection vessel be provided to collect float refuse.	N/A
	<u>Construction of stilling basin at Western Portal outfall</u>	
	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.	N/A
	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.	N/A
	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.	N/A
	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.	N/A
	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.	*
	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.	*

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	Transfer of rock fill material (armour 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.	^
	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.	^
	<u>Construction of TBM tunnel at both portals and intakes</u>	
	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.	N/A
	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.	N/A
	Water flow at streams should be maintained by a temporary diversion system during the construction phase of intakes and manhole drop shafts.	N/A
	<u>General Construction Activities and Workforce</u>	
	A. Surface runoff	
	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.	^
	Under the *Water Pollution Control Ordinance* (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.	^
	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.	^

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Types of Impacts	Mitigation Measures	Status
	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.	^
	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 fabric0 or hydroseedings as far as practicable especially during the wet season.	*
	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.	*
	Vehicle washing areas should be drained into a settlement 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.	^
	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.	^
	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.	*
	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.	*
	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.	*

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Types of Impacts	Mitigation Measures	Status
	C. On-Site Effluent Generation	
	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.	^
	D. Protection of Existing Flora and Fauna	
	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.	^
	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.	^
	<u>Maintaining Baseflow in Downstream Watercourses</u>	
	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.	
	• 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.	N/A N/A N/A N/A N/A N/A

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Types of Impacts	Mitigation Measures	Status
Waste/Chemical	General	
	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.	^
	All waste materials shall be segregated into categories covering:	
	• 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	^
	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.	^
	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 responsible for auditing this system.	^
	IEC should also 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.	^
	Regular cleaning and maintenance of the waste storage area should be conducted throughout the construction stage.	*
	Excavated spoil	
	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:	^

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Types of Impacts	Mitigation Measures	Status
	• Surface of stockpiled soil should be wetted with water when necessary especially during dry season	^
	• Disturbance of stockpiled soil should be minimized	^
	• Stockpiled soil should be properly covered with tarpaulins especially heavy rain storms	^
	• Stockpiling areas should be enclosed if possible	^
	• Stockpiling location should be away from the shoreline	^
	• An independent surface water drainage system equipped with silt traps should be installed at the stockpiling area	^
	<u>Chemical wastes</u>	
	For those processes that generate chemical waste, it may be possible to find alternatives which generate reduced quantities or even no chemical waste, or less dangerous types of chemical waste.	^
	Construction processes produce chemical waste, the contractor must register with EPD as a Chemical Waste Producer. Wastes classified as chemical wastes are listed in the Waste Disposal (Chemical Waste) (General) Regulation (CWR). It should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Waste published by the EPD. A producer of chemical wastes should be registered as chemical waste producer and registered with EPD.	^
	The chemical waste generated shall be properly labelled, stored and disposed of according to the CWR. Proper storage area shall be allocated on site for storage of chemical waste. The chemical waste should only be collected by a licensed collector. An updated list of licensed chemical waste collector can be obtained from EPD.	*
	In case of spillage, spill absorbent material and emulsifiers should be available on site. This material should be replaced on a regular basis and the contaminated material stored in a designated, secure place.	*
	<u>General refuse</u> A reputable waste collector should be employed by the contractor to remove general refuse from the site, separate from C&DM and chemical wastes, and on regular basis in order to minimize odour, pest and litter impacts. The burning of refuse at site is not permitted under the Air Pollution Control Ordinance (Cap 311).	^
	Office waste can be reduced through recycling of paper if volumes are large enough to warrant collection.	^
	Good management practices should be implemented to ensure that refuse is properly stored and is transported for disposal of at licensed landfills.	*

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Terrestrial Ecology	During the detailed design stage, the following issues should also be considered as possible to further minimise the impacts: • 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 Artocarpus hypargyreus recorded within the temporary works area of HKU1, if to be encroached, would also be transplanted. Standard site practices including the following, should be enforced to minimise the disturbance to the surroundings: • 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. 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. 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. 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.	^ ^ ^ ^ ^ ^ ^ ^ ^

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	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. 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.	^ ^
Marine Ecology	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. 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. 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.	* N/A ^

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# Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

Types of Impacts	Mitigation Measures	Status
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	 ^ ^ ^ ^ ^ ^ ^

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
Cultural Heritage	The Cultural Heritage Impact Assessment has identified the following resources which will require mitigation measures during the construction stage; <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. 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. <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. 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.	^ ^ ^ ^

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	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. 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.	^ N/A
Hazard to Life	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.	^

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 H
SITE AUDIT SUMMARY

Appendix H Summary of Observation and Recommendation Made during Site Inspection

Summary of Observation and Recommendation Made during Site Inspection in July 2008

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	04/07/2008	Standing water was observed in the valley at Eastern Portal. The Contractor was reminded to dry it out and pave it to prevent mosquito breed.	*Follow-up action was needed for the item.
	11/07/2008	Standing water was observed at the tank, valley and the bin at Eastern Portal. The Contractor was reminded to clear them and cover the items which may retain water.	Rectification/improvement was observed during the follow-up audit session.
	11/07/2008	Silty water was observed in the drainage channel at the entrance of Eastern Portal. The Contractor was reminded to pump it back for treating before discharging out.	This item was not rectified during the follow-up audit session. Follow-up action was needed for the outstanding item.
	16/07/2008	Silty water was observed in the drainage channel at the entrance of Eastern Portal. The Contractor was reminded to pump it back for treating before discharging out.	Rectification/improvement was observed during the follow-up audit session.
	23/07/2008	Sediment was observed at the drainage channel at Western Portal. The Contractor was reminded to clear them to maintain the drainage system can function properly.	*Follow-up action was needed for the item.
	23/07/2008	Standing water was observed at the entrance of Eastern Portal site. The Contractor was reminded to dry it out.	*Follow-up action was needed for the item.
	30/07/2008	Worn sand bags were observed at both Eastern and Western Portals. The Contractor was reminded to replace them.	Rectification/improvement was observed during the follow-up audit session.
	30/07/2008	Standing water was observed at the entrance of Eastern Portal. The Contractor was reminded to clear them and provided mitigation measures to prevent any water from construction site discharging to the public road.	Rectification/improvement was observed during the follow-up audit session.
	30/07/2008	Sediment was observed at the drainage channel at Western Portal. The Contractor was reminded to clear them.	*Follow-up action was needed for the item.
	30/07/2008	Silty water was observed discharging to the tank at Western Portal. The Contractor was reminded to pump it out for treatment before discharging out.	Rectification/improvement was observed during the follow-up audit session.
Waste / Chemical Management	04/07/2008	Chemical waste was observed without suitable storage area at Eastern Portal. The Contactor was reminded to provide the storage area enclosed on at least three sides by a wall etc. as soon as possible.	Rectification/improvement was observed during the follow-up audit session.
	23/07/2008	Oil leakage was observed at Eastern Portal. The Contractor was reminded to clear them as soon as possible.	Rectification/improvement was observed during the follow-up audit session.
Ecology	30/07/2008	Worn sand bags were observed at both Eastern and Western Portals. The Contractor was reminded to replace them.	Rectification/improvement was observed during the follow-up audit session.
Reminders	30/07/2008	The Contractor was reminded of the followings: - Stockpile more than 20m3 at Western	*Follow-up action was needed for the item.

Parameters	Date	Observations and Recommendations	Follow-up
		Portal should be covered with tarpaulin when it is not in works to prevent dust generation.	

Note: (*) The Environmental deficiencies have been rectified by the Contractor. However, the item was reoccurred during the follow-up site audit due to construction activities/rainstorm. The Contractor was reminded to rectify the deficiencies more frequently.

Summary of Observation and Recommendation Made during Site Inspection in August 2008

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	08/08/2008	Sediment was observed at the drainage channel at Western Portal. The Contractor was reminded to clear them.	Rectification/improvement was observed during the follow-up audit session.
	26/08/2008	*Eastern Portal* Silty water discharge was observed from the site. The Contractor was reminded to clear the desilting facilities more frequently to maintain it can function properly.	Rectification/improvement was observed during the follow-up audit session.
	26/08/2008	*Intakes (MBD2)* Wastewater was observed discharging from the plant equipment to the public road. The Contractor was reminded to erect sand bags bund to prevent any wastewater from discharging out.	Rectification/improvement was observed during the follow-up audit session.
Air Quality	26/08/2008	*Western Portal* Stockpile of cement materials was observed on site. The Contractor was reminded to clear them or cover with tarpaulin.	Rectification/improvement was observed during the follow-up audit session.
Waste / Chemical Management	20/08/2008	Oil leakage was observed from the plant equipments at both Eastern and Western Portals. The Contractor was reminded to clear them and the equipments should be well-maintained to prevent oil leakage.	Rectification/improvement was observed during the follow-up audit session.
	26/08/2008	*Western Portal* Discarded cement bags (abandon) was observed on site. The Contractor was reminded to clear them.	Rectification/improvement was observed during the follow-up audit session.
	26/08/2008	*Intakes (MB16)* General refuses and discarded leaves were observed in the stream water. The Contractor was reminded to clear them.	Rectification/improvement was observed during the follow-up audit session.
	26/08/2008	*Intakes (MBD2)* Discarded leaves were observed around the site. The Contractor was reminded to clear them.	Rectification/improvement was observed during the follow-up audit session.
Ecology	13/08/2008	Worn sand bags were observed at Eastern Portal near the existing stream. The Contractor was reminded to replace them and provide maintenance more frequently.	Rectification/improvement was observed during the follow-up audit session.
	26/08/2008	*Eastern Portal* Sediment was observed at the access road near the existing stream. The Contractor was reminded to clear them regularly.	Rectification/improvement was observed during the follow-up audit session.
Reminders	08/08/2008	The Contractor was reminded of the followings: - Standing water at both Eastern and Western Portals site should be cleared after the rain.	Rectification/improvement was observed during the follow-up audit session.
	08/08/2008	The Contractor was reminded of the followings: - Stockpile at Western Portal should be covered with tarpaulin during rainstorm to prevent surface runoff and dust generation.	Rectification/improvement was observed during the follow-up audit session.
	13/08/2008	The Contractor was reminded of the followings: - Standing water at Eastern Portal site should	Rectification/improvement was observed during the follow-up audit session.

Parameters	Date	Observations and Recommendations	Follow-up
		be cleared after washing the site area.	

Note: (*) The Environmental deficiencies have been rectified by the Contractor. However, the item was reoccurred during the follow-up site audit due to construction activities/rainstorm. The Contractor was reminded to rectify the deficiencies more frequently.

Summary of Observation and Recommendation Made during Site Inspection in September 2008

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	03/09/2008	Uneven areas that retain the standing water were observed at Western Portal. The Contractor was reminded to pave them.	*Follow-up action was needed for the item.
	03/09/2008	Stagnant water was observed at the items on Eastern Portal site which may retain water. The Contractor was reminded to dry it out.	Rectification/improvement was observed during the follow-up audit session.
	12/09/2008	Uneven areas that retain the stagnant water were observed at Western Portal. The Contractor was reminded to pave them.	Rectification/improvement was observed during the follow-up audit session.
	17/09/2008	Standing water was observed at underneath the plant equipment at Western Portal. The Contractor was reminded to dry it out.	Rectification/improvement was observed during the follow-up audit session.
	17/09/2008	*Marine Works* Debris was observed around the barge. The Contractor was reminded to clean them up.	Rectification/improvement was observed during the follow-up audit session.
	17/09/2008	Standing water with oil leakage in the drip tray at M3. The Contractor was reminded to clear them and disposed by licensed collector.	Rectification/improvement was observed during the follow-up audit session.
	24/09/2008	Sediment was observed accumulate at the drainage channel to the outfall at Western Portal. The Contractor was reminded to clear them.	Rectification/improvement was observed during the follow-up audit session.
	24/09/2008	Standing water in the drip tray at M3 was observed. The Contractor was reminded to dry it out.	The item was not observed during the follow-up audit session.
	29/09/2008	Stagnant water was observed at underneath of plants at Western Portal. The Contractor was reminded to dry it out more frequently.	Rectification/improvement was observed during the follow-up audit session.
	29/09/2008	Standing water in the drip tray at M3 was observed. The Contractor was reminded to dry it out.	Rectification/improvement was observed during the follow-up audit session.
Air Quality	17/09/2008	Black smoke emission was observed from plants were observed at Western Portal. The Contractor was reminded to provide well maintenance of the plants.	Rectification/improvement was observed during the follow-up audit session.
Waste / Chemical Management	03/09/2008	Chemical containers were observed standing on the bare ground at Western Portal. The Contractor was reminded to provide the drip tray or store it properly.	Rectification/improvement was observed during the follow-up audit session.
	03/09/2008	Uncover container with chemical oil was observed at Eastern Portal. The Contractor was reminded to clear them as soon as possible to prevent overflow during the rainstorm.	Rectification/improvement was observed during the follow-up audit session.
	12/09/2008	A part of plant equipment with chemical oil was observed standing on the bare ground at Western Portal. The Contractor was reminded to remove it to prevent land contamination.	Rectification/improvement was observed during the follow-up audit session.
	12/09/2008	Oil leakage was observed from the drilling rig at Eastern Portal. The Contractor was reminded clear them and provide well maintenance.	*Follow-up action was needed for the item.
	17/09/2008	Vegetation debris was observed accumulate	*Follow-up action was needed

Parameters	Date	Observations and Recommendations	Follow-up
		at MB16 and M3. The Contractor was reminded to clean them up.	for the item.
	17/09/2008	Oil leakage was observed on the paved road at Eastern Portal. The Contactor was reminded to clear them.	Rectification/improvement was observed during the follow-up audit session.
	17/09/2008	Standing water with oil leakage in the drip tray at M3. The Contractor was reminded to clear them and disposed by licensed collector.	*Follow-up action was needed for the item.
	24/09/2008	Vegetation debris was observed around the site M3. The Contractor was reminded to clear them more frequently.	The item was not observed during the follow-up audit session.
	29/09/2008	Vegetation debris was observed around the site M3. The Contractor was reminded to clear them more frequently.	Rectification/improvement was observed during the follow-up audit session.
Marine Ecology	17/09/2008	Opening of silt curtain was observed at Western Portal. The Contractor was reminded to check it more frequently.	Rectification/improvement was observed during the follow-up audit session.
Reminders	12/09/2008	The Contractor was reminded of the followings: - Opening of silt curtain was observed at Western Portal. The Contractor was reminded to make sure no marine works were conducted during the silt curtain opened for the barge to pass in and out.	*Follow-up action was needed for the item.
	17/09/2008	The Contractor was reminded of the followings: - Water regularly on the unpaved area at Western Portal to prevent dust generation.	Rectification/improvement was observed during the follow-up audit session.
	24/09/2008	The Contractor was reminded of the followings: - C&D waste was observed accumulate at the material skip at Eastern Portal. Regular clear the waste is needed.	*Follow-up action was needed for the item.
	29/09/2008	The Contractor was reminded of the followings: - Regular clear the C&D waste at the material skip at Eastern Portal is necessary.	Rectification/improvement was observed during the follow-up audit session.

Note: (*) The Environmental deficiencies have been rectified by the Contractor. However, the item was reoccurred during the follow-up site audit due to construction activities/rainstorm. The Contractor was reminded to rectify the deficiencies more frequently.

APPENDIX I
SUMMARY STATUS OF ENVIRONMENTAL LICENCES AND PERMITS

Appendix I - Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
FEP-01/272/2007/A	28/1/08	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
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-RS0114-08	08/03/08	06/09/08	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.	Valid
GW-RS0363-08	10/06/08	23/08/08	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Cyberport Road near Cyberport Sewage Treatment Plant, Cyberport, Hong Kong.	Valid
GW-RS0612-08	07/09/08	06/03/09	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.	Valid
GW-RS0611-08	01/09/08	28/02/09	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Cyberport Road near Cyberport Sewage Treatment Plant, Cyberport, Hong Kong.	Valid

APPENDIX J
WASTE GENERATED QUANTITY

Monthly Waste Flow Table

Quarter ending		Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 3)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see notes 2)	Chemical Waste	Others, e.g. general refuse
	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)	(in '000 m^3)
Feb-08											40 m^3
Mar-08					6 m^3						84 m^3
Apr-08					34 m3						34 m^3
May-08					566 m3			2 m3			39 m3
Jun-08					486 m3	30 m3				0.4 m3	6 m3
Jul-08					1311 m3	3004 m3				0.2 m3	45 m3
Aug-08			1100 m3		904 m3	2404 m3		2 m3		0.2 m3	34 m3
Sep-08			1620 m3		64 m3	11504 m3					11 m3
Oct-08											
Nov-08											
Dec-08											
Total	0	0	2720 m3	0	3371 m^3	16942 m3	0	4 m3	0	0.8 m3	293 m^3

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) Broken concrete for recycling into aggregates.
(4) The Figures for September 2008 are as of 30-09-08.

APPENDIX K
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
(18 September 2008 in the reporting quarter – NC1)

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
(5, 12 and 24 September 2008 in the reporting quarter)

Contract No. DC/2007/10
Design and Construction of Hong Kong West Drainage Tunnel - Exceedance Report
Report No. 80909W-80905_S

Part A – Exceedance Summary Tables (5 September 2008)

Table 1: Parameter – Suspended Solids (mg/L)

Station No.	Tide	Baseline Action Level (mg/l)	Baseline Limit Level (mg/l)	Measured value (mg/l)	Control Station(s)	Measured Value at Control Stations (mg/l)	120% of Control Station Action Level (mg/l)	130% of Control Station Limit Level (mg/l)	Level Exceeded	Justification *
II	Mid-ebb	15.7	16.4	19.2	CE	20.3	24.4	26.4	Limit	(2) & (3)
I2				19.5						
Intake A				21.3						(1) & (3)
Intake B				17.8						
Intake A	Mid-flood			16.8	CF	16.0	19.2	20.8	Limit	(1) & (3)
Intake B				19.2						

*Remarks *(1) – No construction activity was observed.*
(2) – No pollution discharge from construction activity was observed.
(3) – *Control Station value already exceeded either the Baseline Action or Limit Levels.*

Contract No. DC/2007/10
Design and Construction of Hong Kong West Drainage Tunnel - Exceedance Report
Report No. 80916W-80912_DO&SS

Part A – Exceedance Summary Tables (12 September 2008)

Table 1: Parameter – Suspended Solids (mg/L)

Station No.	Tide	Baseline Action Level (mg/l)	Baseline Limit Level (mg/l)	Measured value (mg/l)	Control Station(s)	Measured Value at Control Stations (mg/l)	120% of Control Station Action Level (mg/l)	130% of Control Station Limit Level (mg/l)	Level Exceeded	Justification *
I1	Mid-ebb	15.7	16.4	24.3	CE	30.7	36.8	39.9	Limit	(2), (3) & (4)
Intake A				29.5						(1) , (3) & (4)
Intake B				33.8						
I1	Mid-flood			22.2	CF	24.0	28.8	31.2	Limit	(2), (3) & (4)
I2				27.0						
Intake A				26.7						(1) , (3) & (4)
Intake B				24.7						

Table 2: Parameter – Dissolved Oxygen (mg/L)

Station No.	Measured Value	DO, mg/L (Bottom)		Control Station (s)	Measured Value at Control Stations (mg/L)	Level Exceeded	Justification*
		Action value	Limit Value				
Intake B	5.4	6.0	5.8	CE	4.9	Limit	(1) , (3) & (4)

*Remarks
(1) – No construction activity was observed.
(2) – No pollution discharge from construction activity was observed.
(3) – *Control Station value already exceeded either the Baseline Action or Limit Levels.*
(4) – *Natural algae were observed.*

Contract No. DC/2007/10
Design and Construction of Hong Kong West Drainage Tunnel - Exceedance Report
Report No. 80926W-80924_S

Part A – Exceedance Summary Tables (24 September 2008)

Table 1: Parameter – Suspended Solids (mg/L)

Station No.	Tide	Baseline Action Level (mg/l)	Baseline Limit Level (mg/l)	Measured value (mg/l)	Control Station(s)	Measured Value at Control Stations (mg/l)	120% of Control Station Action Level (mg/l)	130% of Control Station Limit Level (mg/l)	Level Exceeded	Justification *
I1	Mid-flood	15.7	16.4	33.5	CF	19.5	23.4	25.4	Limit	(1) & (3)
I2				32.2						
Intake A				26.8						
Intake B				30.7						

*Remarks *(1) – No construction activity was observed.*
(2) – No pollution discharge from construction activity was observed.
(3) – *Control Station value already exceeded either the Baseline Action or Limit Levels.*

Contract No. DC/2007/10
Design and Construction of Hong Kong West Drainage Tunnel
Report No. 80918_noise_NC1

Date of Measurement: 18th September 2008
Time of Measurement: 1st 16:00 (NC1) and 2nd 16:35(NC1)

Location	Parameter	Measured Level (Leq dB(A))	Baseline Level (Leq dB(A))	Actual Construction Noise Level (Leq dB(A))	Action Level ($\mu g/m^3$)	Limit Level (Leq dB(A))	Level exceeded
NC1(1st)	Construction Noise	74.3	70.2	72.2	When one documented complaint is received	70.0	Limit
NC1 (2nd)		72.8		69.3			-

Remark:

(1) Repeated measurement was carried out on the same day to confirm result.

Remarks

(a) Statement of exceedance(s)

Construction noise measured at NC1 – True Light Middle School of Hong Kong

(b) Cause of exceedance(s)

The exceedance was considered related to the Project works:

- According to our field observation, operations of rock breaking works were identified as the dominant noise source.

(c) Event/Action Plan for Construction Noise under Table 3.3 of the Updated EM&A Manual

The Contractor is required to:-

1. Take immediate action to avoid further exceedance
2. Identify practicable measures to minimize the noise impact. Submit proposals for remedial actions to Supervising Officer's Representative within three working days of notification
3. Implement the agreed proposals
4. Resubmit proposal if problem still not under control
5. Stop the relevant portion of works as determined by the Supervising Officer's Representative until the exceedance is abated

(d) ET's conclusions and recommendations for mitigation

- The exceedance was considered related to the Project works.
- The Contractor is required to implement noise mitigation measures to rectify the problem.
- The Contractor is recommended to reduce the time of continuous operation of rock breaking works. In addition, concurrent implementation of rock breaking works should be avoided whenever possible.

APPENDIX L
COMPLAINT LOGS

APPENDIX L – 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 Ms. Ng on 22 May 2008 regarding noise nuisance generated from the construction activities at the construction site of Eastern Portal	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. 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. 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-2008-05-004	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	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				noise monitoring results was recorded in May and (2) no non-compliance or observation on noise was recorded.	
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 Limitied) adjacent to Eastern Portal area. 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. 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. 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.	Closed