

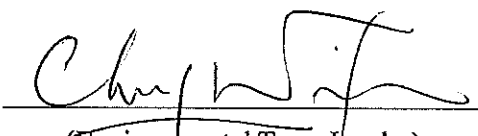
Dragages-Nishimatsu Joint Venture

Contract No. DC/2007/10

Design and Construction of Hong Kong West Drainage Tunnel

Quarterly EM&A Report
(version 1.0)

January to March 2009

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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TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	1
1. INTRODUCTION	6
2. PROJECT CHARACTERISTICS.....	7
PROJECT ORGANIZATION AND CONTACTS OF KEY MANAGEMENT.....	7
CONSTRUCTION PROGRAMME AND SYNOPSIS OF WORK.....	8
3. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS	9
MONITORING PARAMETERS AND MONITORING LOCATIONS	9
MONITORING METHODOLOGY AND CALIBRATION DETAILS.....	9
ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS).....	9
ENVIRONMENTAL MITIGATION MEASURES	9
4. MONITORING RESULTS.....	10
WEATHER CONDITIONS.....	10
AIR QUALITY.....	10
CONSTRUCTION NOISE.....	10
WATER QUALITY	10
UNDERGROUND WATER LEVEL	11
5. ENVIRONMENTAL AUDIT	13
IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES	13
SITE AUDIT SUMMARY.....	13
EFFECTIVENESS OF MITIGATION MEASURES	16
STATUS OF ENVIRONMENTAL LICENSING AND PERMITTING	16
STATUS OF WASTE MANAGEMENT	17
6. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)	18
SUMMARY OF EXCEEDANCES	18
CONSTRUCTION IMPACTS ON SUSPENDED SOLIDS	18
REVIEW OF THE REASONS FOR AND THE IMPLICATIONS OF NON-COMPLIANCE	19
7. ENVIRONMENTAL COMPLAINTS AND PROSECUTIONS.....	20
8. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS.....	21

LIST OF TABLE

Table I	Summary Table for Non-compliance Recorded in the Reporting Quarter
Table II	Summary Table for Key Information in the Reporting Quarter
Table 2.1	Key Project Contacts
Table 4.1	Summary of Water Quality Exceedances in the Reporting Quarter
Table 4.2	Ground Water Level Monitoring Data at Location ADH48 in Reporting Quarter
Table 6.1a-b	Summary of Measured levels of Suspended Solids

LIST OF FIGURES

Figure 1	Layout Plan of the Project
Figure 2	Organization Chart
Figure 3a	Locations of Air Quality and Construction Noise Monitoring Stations at Eastern Portal
Figure 3b	Locations of Air Quality and Construction Noise Monitoring Stations at Western Portal
Figure 4a-b	Locations of Water Quality Monitoring Stations
Figure 5	Location of Ground Water Level Monitoring Stations

LIST OF APPENDICES

A	Construction Programme
B	Monitoring Requirements
C	Action and Limit Levels for Air Quality, Noise and Water Quality
D	Graphical Presentation of Air Quality Monitoring Results
E	Graphical Presentation of Noise Monitoring Results
F	Graphical Presentation of Water Quality Monitoring Results
G	Environmental Mitigation Implementation Schedule (EMIS)
H	Site Audit Summary
I	Summary Status of Environmental Licences and Permits
J	Waste Generated Quantity
K	Summary of Exceedances
L	Complaint Log

EXECUTIVE SUMMARY

Introduction

1. This is the 4th Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the “Drainage Improvement in Northern Hong Kong Island – Hong Kong West Drainage Tunnel” (the Project). This summary report presents EM&A works performed in the period between January and March 2009.
2. The construction activities undertaken in the reporting quarter were:
 - Further establishment of project organization and staffing;
 - Initial tunnel excavation, tunnel invert concrete, construction of intake cofferdam & River Channel and installation of temporary facilities at Eastern Portal;
 - Arch tunnel excavation, TBM assembly, shallow & deep excavation works, base slab construction and installation of temporary facilities at Western Portal;
 - Site preparation works at Intake W0;
 - Utilities trial pits and additional site investigation works at Intakes SM1 & PFLR1;
 - Utilities trial pits and additional site investigation works at 5 locations;
 - Ground Investigation (GI) works at Intake SM1;
 - Approved in Principle (AIP) & Detailed Design Approval (DDA) submissions for temporary works at both portals;
 - AIP & DDA submissions for temporary and permanent works for 32 nos. Intakes;
 - AIP & DDA submissions for Adit/Main Tunnel Intersection, Adits, Stilling Chambers and Turning Bays;
 - Environmental impact monitoring;
 - Casting of tunnel segments;
 - TBM fabrication; delivery, inland transportation and assembly planning; and
 - Fabrication of gantries for WP cranes and conveyors for EP & WP.

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				
<i>January 2009</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
<i>February 2009</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
<i>March 2009</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
Western Portal				
<i>January 2009</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
Water Quality				
<i>February 2009</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
Water Quality	0	0	N.A.	N.A.
<i>March 2009</i>				
1-hr TSP	0	0	N.A.	N.A.
24-hr TSP	0	0	N.A.	N.A.
Noise	0	0	N.A.	N.A.
Water Quality	0	0	N.A.	N.A.

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 24-hour TSP monitoring on 30 January 2009 at AQ1 was cancelled due to True Light Middle School of Hong Kong was closed. No Action/Limit Level exceedance was recorded for 24-hr TSP monitoring in the reporting quarter.

Construction Noise

7. Noise monitoring at 3 monitoring stations, NC1/NC1a, NC2 and NC3, was conducted as schedule in the reporting period except the noise monitoring on 30 January 2009 at NC1 was cancelled due to True Light Middle School of Hong Kong was closed. No Action/Limit Level exceedance was recorded.

Water Quality

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

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, EP820/W9/XT086 for Western Portal and EP680/W10/XY0183 for Intake W0) and Construction Noise Permit (License No.: GW-RS0035-09 for Eastern Portal and GW-RS0894-08 for Western Portal) in January 2009, CNP (License No.: GW-RS0035-09 for Eastern Portal and GW-RS0076-09 for Western Portal) in February 2009 and CNP (License No.: GW-RS0184-09 for Eastern Portal and GW-RS0213-09 for Western Portal) in March 2009.

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	5	Water Quality (1) Construction Noise at Eastern Portal (1) Construction Noise at Western Portal (3)	Muddy Water Discharged into Sea at Western Portal (Investigation report was submitted)	Verified by IEC	Closed
			Complaint of Construction Noise at Early Morning at Eastern Portal Site (Letter with investigation findings was submitted)		
			Complaint of Construction Noise at midnight works at WP (Letter with investigation findings was submitted)		
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. Five environmental complaints were received during the reporting quarter.

13. No warning, summon and notification of successful prosecution was 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 4th quarterly EM&A report summarizing the EM&A works for the Project in the period between January and March 2009.

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 24-hour TSP monitoring on 30 January 2009 at AQ1 was cancelled due to True Light Middle School of Hong Kong was closed. 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 3 monitoring stations, NC1/NC1a, NC2 and NC3, was conducted as schedule in the reporting period except the noise monitoring on 30 January 2009 at NC1 was cancelled due to True Light Middle School of Hong Kong was closed. No Action/Limit Level exceedance was recorded.
- 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. No Action/Limit Level exceedance was recorded.

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

Table 4.1 Summary of Water Quality Exceedances in the Reporting Quarter

Water Quality	No. of Exceedances		Action Taken	Results of Action Taken	Remarks
	Action Level	Limit Level			
<i>January 2009</i>					
DO (Surface and Middle)	0	0	N/A	N/A	N/A
DO(Bottom)	0	0			
Turbidity	0	0			
SS	0	0			
<i>February 2009</i>					
DO (Surface and Middle)	0	0	N/A	N/A	N/A
DO(Bottom)	0	0			
Turbidity	0	0			
SS	0	0			
<i>March 2009</i>					
DO (Surface and Middle)	0	0	N/A	N/A	N/A
DO(Bottom)	0	0			
Turbidity	0	0			
SS	0	0			

- 4.9 No Action/Limit Level exceedance was recorded.
- 4.10 The graphical presentations of the water quality monitoring results are shown in **Appendix F**.

Underground water level

- 4.11 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.
- 4.12 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
5 January 2009	9.61
22 January 2009	9.98
4 February 2009	9.95
15 March 2009	9.30

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 with oil was observed at the drip tray at Western Portal.
- Silty water was observed discharging to the existing stream, U-Channel and public road at Eastern Portal.
- Muddy water and sediment was observed accumulate at the paved area at Eastern Portal.
- Standing water was observed at the pit area at Eastern Portal.
- Milky water was observed at the U-Channel at Eastern Portal.
- General refuse with standing water was observed at nullah at Western Portal.
- Sediment was observed accumulated at the culvert at Eastern Portal.
- Debris and stones were observed accumulated at the U-Channel near the Wetsep at Western Portal.
- Standing water was observed at the drip tray at Intake PFLR1.
- Drainage channel was observed without covered at near the works at Intake PFLR1.
- Standing water was observed at the pit area of the concrete blocks at Eastern and Western Portal.
- Sediment was observed accumulated at the boundary of the access road at Eastern Portal.
- Standing water was observed at the uneven area at Western Portal.
- Stockpile and exposed slope were observed without cover at Western Portal.
- Standing water with vegetation waste was observed at the drip tray at Eastern Portal.

Air Quality

- Opened cement bags were observed without covered at Western Portal.
- Dry unpaved area was observed at Western Portal.
- Discarded cement bags were observed at near the nullah at Western Portal and Eastern Portal.
- Stockpile and exposed slope were observed without covered at Western Portal.

Waste/ Chemical Management

- Oil drums were observed standing on the bare ground at Western Portal.
- Standing water with oil was observed at drip tray at Western Portal.
- Oil leakage was observed at underneath of plant equipment at Eastern and Western Portal.
- General refuse, sediment and standing water was observed at nullah Western Portal.
- Chemical oil drum was observed without chemical label and not stored properly at Western Portal.
- Generator was observed to be placed outside the site and without drip tray at Intake W0.
- C&D waste were observed accumulated in the material skip at Eastern Portal.
- C&D waste was observed not stored properly at Intake W0.
- Empty chemical containers were observed accumulated at Western Portal.
- Material skip was observed not provided at Intake W0.
- Oil leakage was observed the coffer dam at Western Portal.
- General refuse was observed disposed not properly at Western Portal.
- Paint was observed leaking to the drainage channel at Western Portal and Intake W0.
- Oil dropped from the hose was observed at near the tunnel at Western Portal.
- Standing water with vegetation waste was observed at the drip tray at Eastern Portal.
- Vegetation waste was observed accumulated at near the drainage channel at Eastern Portal.
- Oil stains were observed at Intake W0.

Ecology

- Silty water was observed discharging at the existing stream at Eastern Portal.

Marine Ecology

- Silty water was observed within the silt curtain at Western Portal.

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

14th January 2009Eastern Portal

- New wastewater treatment plant was observed. However, chemical drums other than those for treatment system were also placed in the same compartment. Prompt removal is necessary.
- Vegetation waste at slope side was observed. Proper temporary storage area should be provided.
- It is observed that there was an opening at manhole which allowed the mixing of surface runoff from outside and treated effluent. No mixing should be allowed. The arrangement of drainage should be reviewed.
- Water ponding at piling area above nullah was observed. Prompt cleaning up is needed.

Western Portal

- Stagnant water was observed at several areas. E.g. slope, drip tray, I-beam and cable trench. Prompt cleaning up is needed.
- The haul road and exposed slope were dry. More frequent watering is necessary.
- No chemical label was provided for an oil drum located near the eastern side of the site.
- Chemical spillage was found near the oil drum as mentioned in item above.
- Cement bags were not covered next to the grouting machine. Dust control measures should be provided promptly.

27th February 2009Eastern Portal

- Two sedimentation pits were observed at nullah work site. Wastewater inside the pits was silty with mud. The wastewater and surface runoff collection as well as the treatment capacity should be reviewed to ensure water discharge from site could comply with Effluent Discharge License requirements.
- The bund (sand bags) along access road was incomplete. The condition of sand bags was poor. Prompt rectification is necessary.
- Water sampling point was located after mixing with outside surface runoff from manhole. It is recommended that water sampling should be collected before mixing with other water sources. The sampling arrangement should be reported to EPD as appropriate.

W0

- Paint spillage at U-Channel was observed. Prompt cleaning up and precautionary measures should be carried out.

Western Portal

- Paper was mixed with other C&D waste in the skip. Waste segregation should be properly performed.
- Rubbish discarded next to the water discharge point was observed.
- Cement bags delivered to site were not covered.

27th March 2009

Intake SM1 (near noise barrier at road side)

- Part of the muddy slope was not covered. Entire coverage of exposed soil should be provided during the rain.

W0 & Western Portal

- The temporary drainage arrangement for surface runoff was soak away, which is not recommended. Prompt provision of proper sedimentation system and collection arrangement is necessary.

Western Portal

- Large amount of silty surface runoff was rushing toward the sedimentation tank which was full already. The collection and treatment capacity for surface runoff should be reviewed to catch heavy rainfall in wet season.
- Silty runoff was observed at the perimeter drain near the Barging area. As the water quality of discharge could not be inspected, it is difficult to determine if Effluent Discharge License requirements are fulfilled. The arrangement of collection, treatment and discharge location should be reviewed.
- Waste sorting was still not observed. Sorting area and refuse collection area should be cleaning identified.

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, EP820/W9/XT086 for Western Portal and EP680/W10/XY0183 for Intake W0) and Construction Noise Permit (License No.: GW-RS0035-09 for Eastern Portal and GW-RS0894-08 for Western Portal) in January 2009, CNP (License No.: GW-RS0035-09 for Eastern Portal and GW-RS0076-09 for Western Portal) in February 2009 and CNP (License No.: GW-RS0184-09 for Eastern Portal and GW-RS0213-09 for Western Portal) in March 2009.

- 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 29 nos. of dump trucks of waste were delivered to SENT, 3055 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. No overloading case was recorded during this reporting period. 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 January – March 2009 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 No Action/ Limit Level exceedance was recorded in the reporting quarter.

Water Quality

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

Construction Impacts on Suspended Solids

- 6.5 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
			(Jan – Mar09)	(Jan – Mar09)	(Jan – Mar09)	(Jan – Mar09)
I1	11.7	12.3	8.9	8.6	Yes	Yes
I2	11.5			8.5		Yes
Intake A	10.2			8.6		Yes
Intake B	11.1			8.8		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
			(Jan – Mar09)	(Jan – Mar09)	(Jan – Mar09)	(Jan – Mar09)
I1	11.6	11.7	8.3	7.9	Yes	Yes
I2	10.9			8.0		Yes
Intake A	11.0			8.3		Yes
Intake B	11.4			7.9		Yes

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

6.6 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 Five environmental complaints were received during the reporting quarter. The updated Complaint Log is attached in **Appendix L**.
- 7.2 No warning, summon and notification of successful prosecution was received in the reporting period.
- 7.3 There were a total of 17 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:

- Delivery and assembly of TBM, temporary cofferdam and permanent slope excavation for River Channel and site installation for TBM operation at Eastern Portal;
- Initial TBM drive and site installation for TBM operation at Western Portal;
- Preliminary and design works and temporary cofferdam at Intake W0;
- Utilities trial pits and additional site investigation works at available intakes;
- Casting of tunnel segments in China; and
- Gantries and Conveyor erection for West Portal.

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.

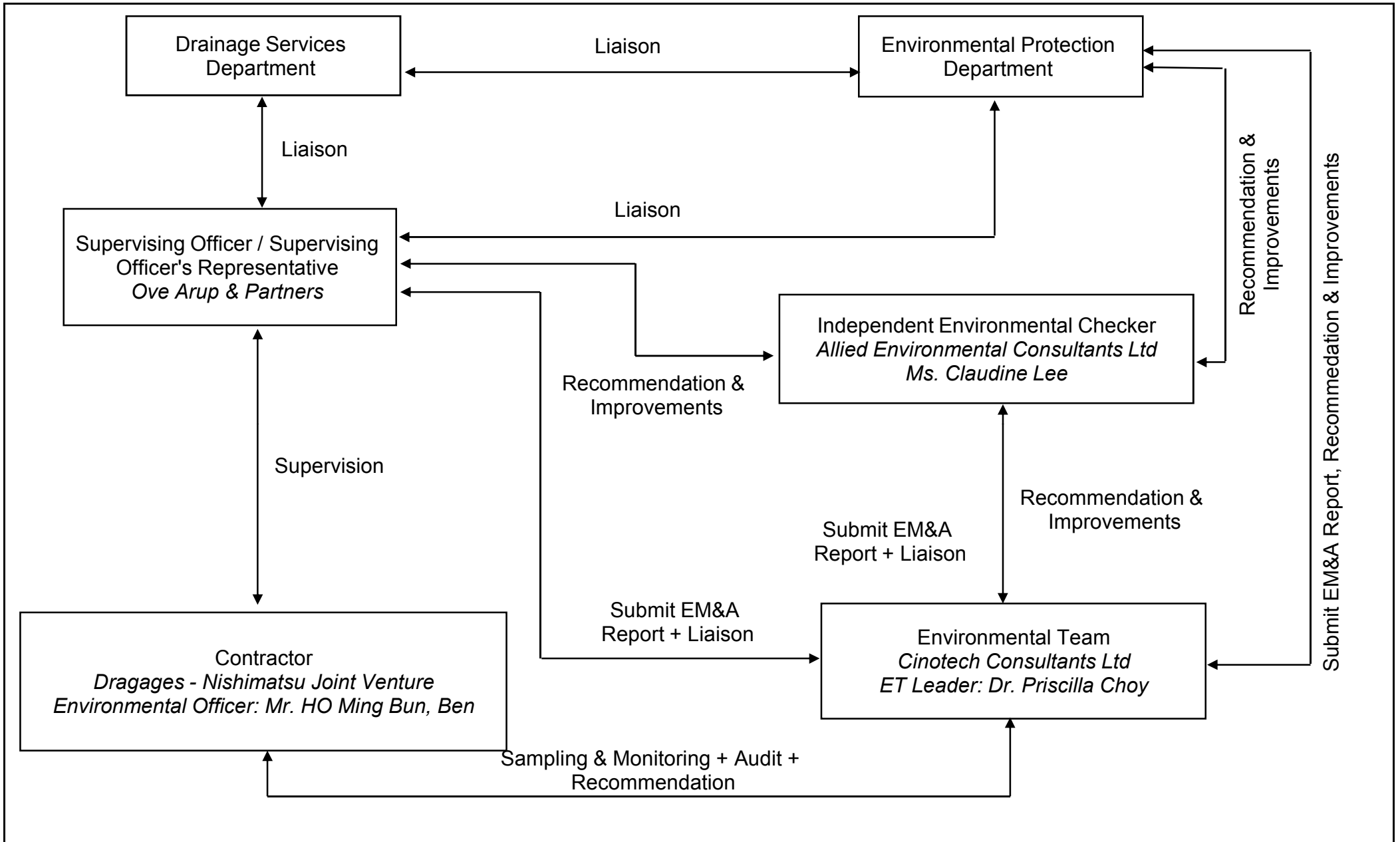
Waste/Chemical Management

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



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

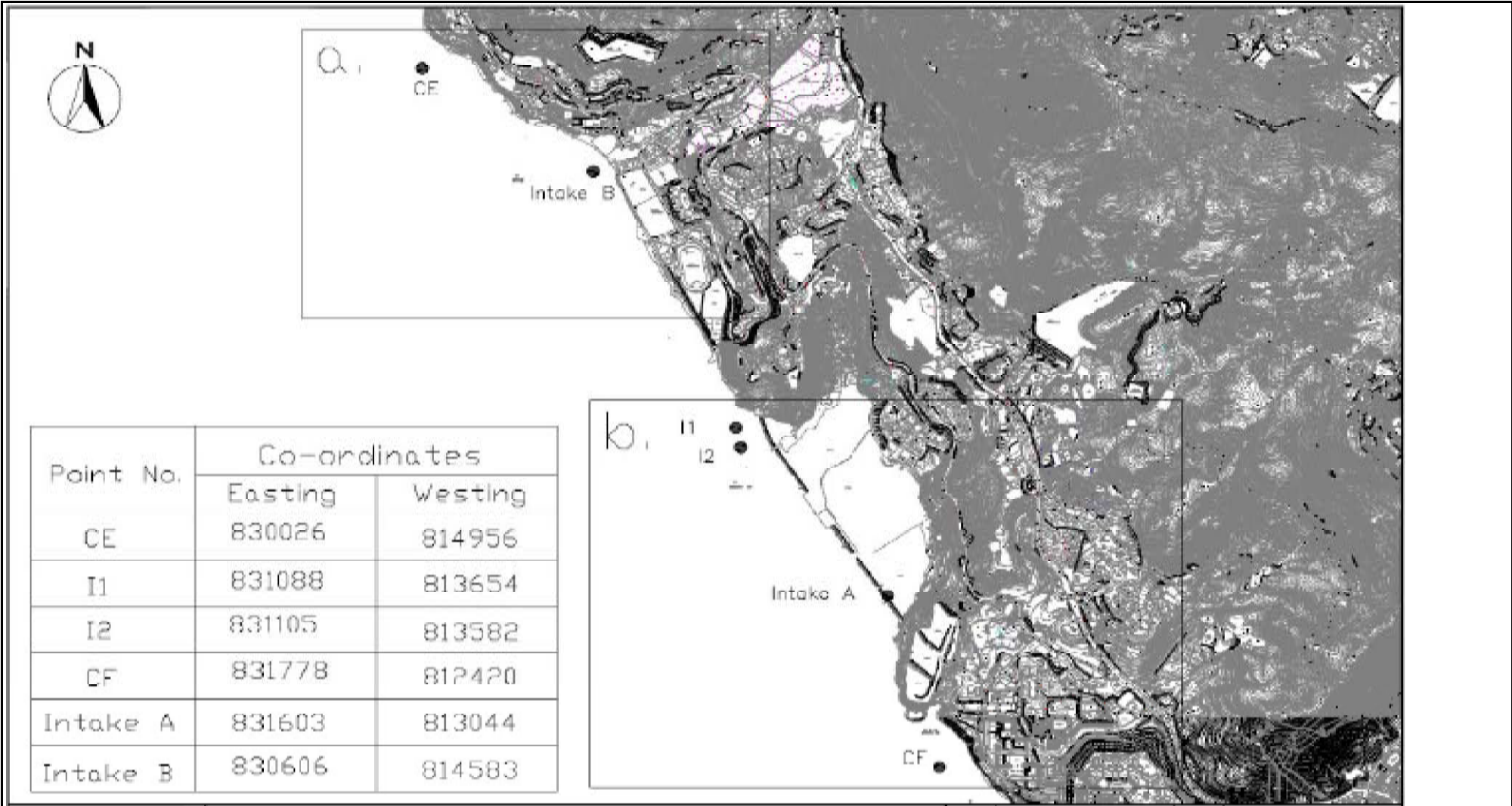




Title	Contract No. DC/2007/10		Scale	Project	CINOTECH
	Design and Construction of Hong Kong West Drainage Tunnel (Eastern Portal)		N.T.S	No. MA8001	
	Locations of Air Quality and Noise Monitoring Station		Date	Figure	
			Dec-08	3a	



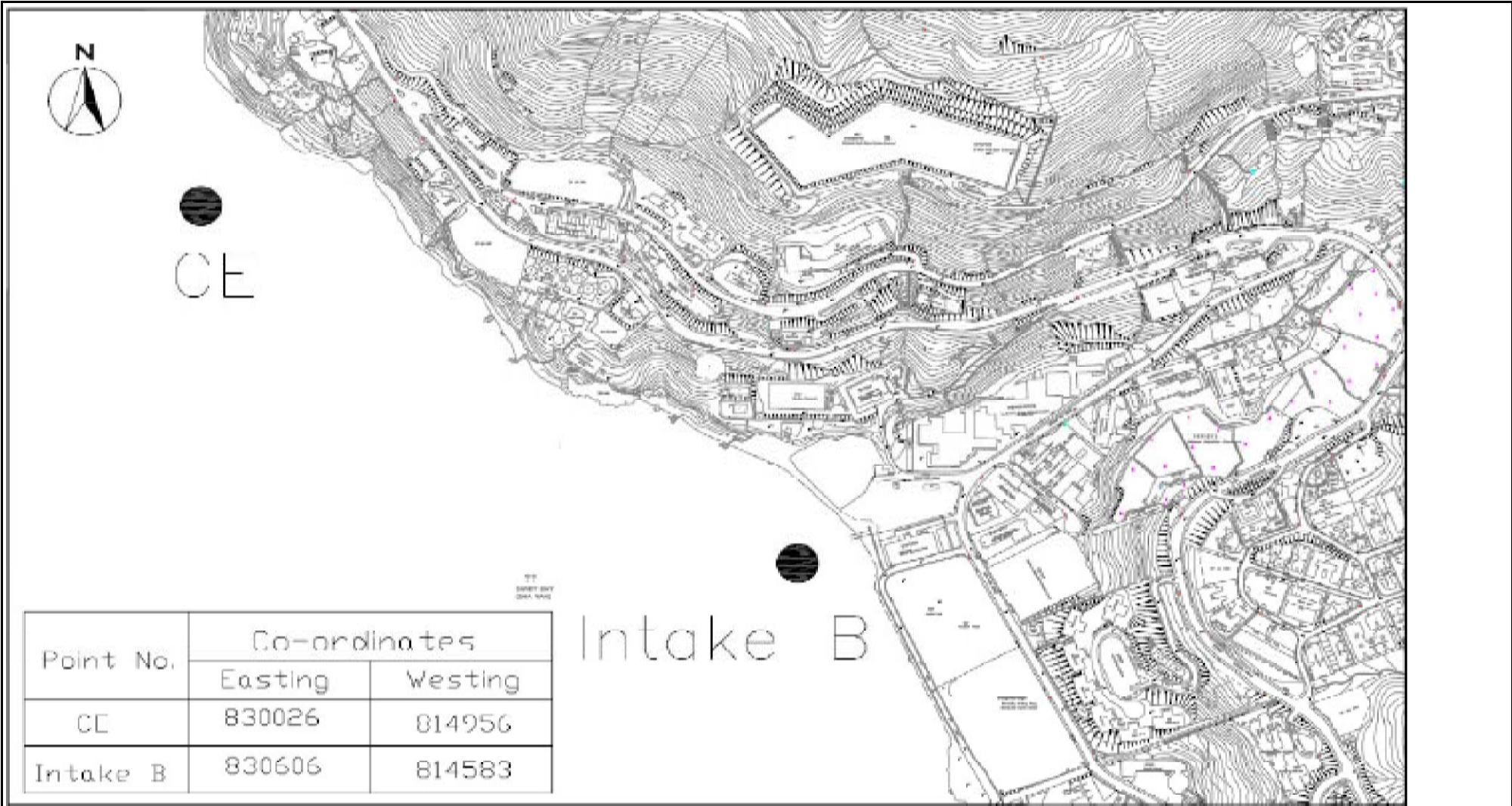
Title	Contract No. DC/2007/10		Scale	Project		CINOTECH
	Design and Construction of Hong Kong West Drainage Tunnel (Western Portal)			N.T.S	No.	
Locations of Air Quality and Noise Monitoring Station		Date	Figure			
		Jul-08	3b			



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

Scale	N.T.S	project No.	MA8001
Date	Jul-08	Figure	4

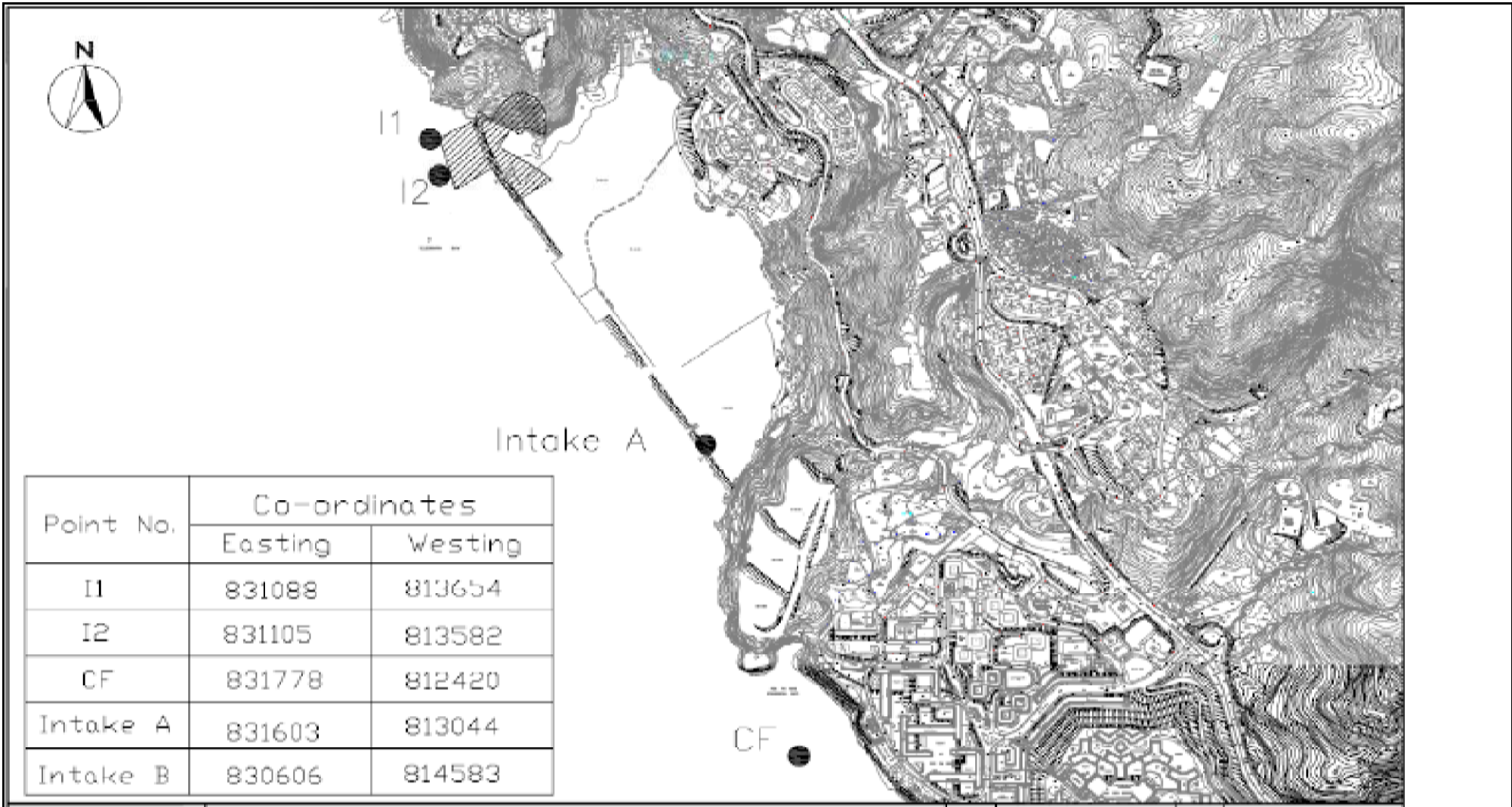




Title Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 Locations of Water Quality Monitoring Stations

Scale N.T.S
 project No. MA8001
 Date Jul-08
 Figure 4a

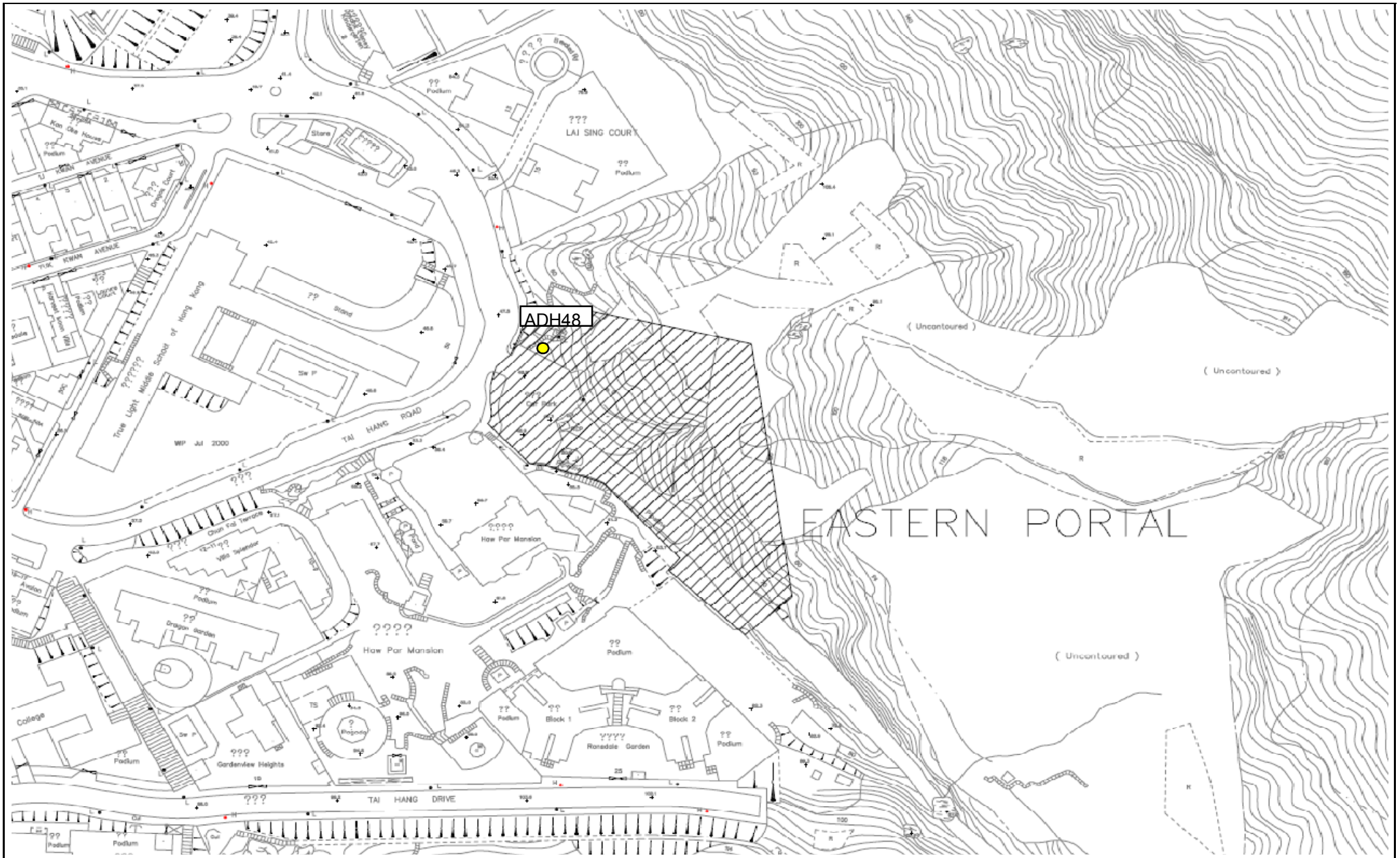




Title Contract No. DC/2007/10
 Design and Construction of Hong Kong West Drainage Tunnel
 Locations of Water Quality Monitoring Stations

Scale	N.T.S	project No.	MA8001
Date	Jul-08	Figure	4b





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	Project No.	MA8001
Date	Jul-08	Figure	5



**APPENDIX A
CONSTRUCTION PROGRAMME**

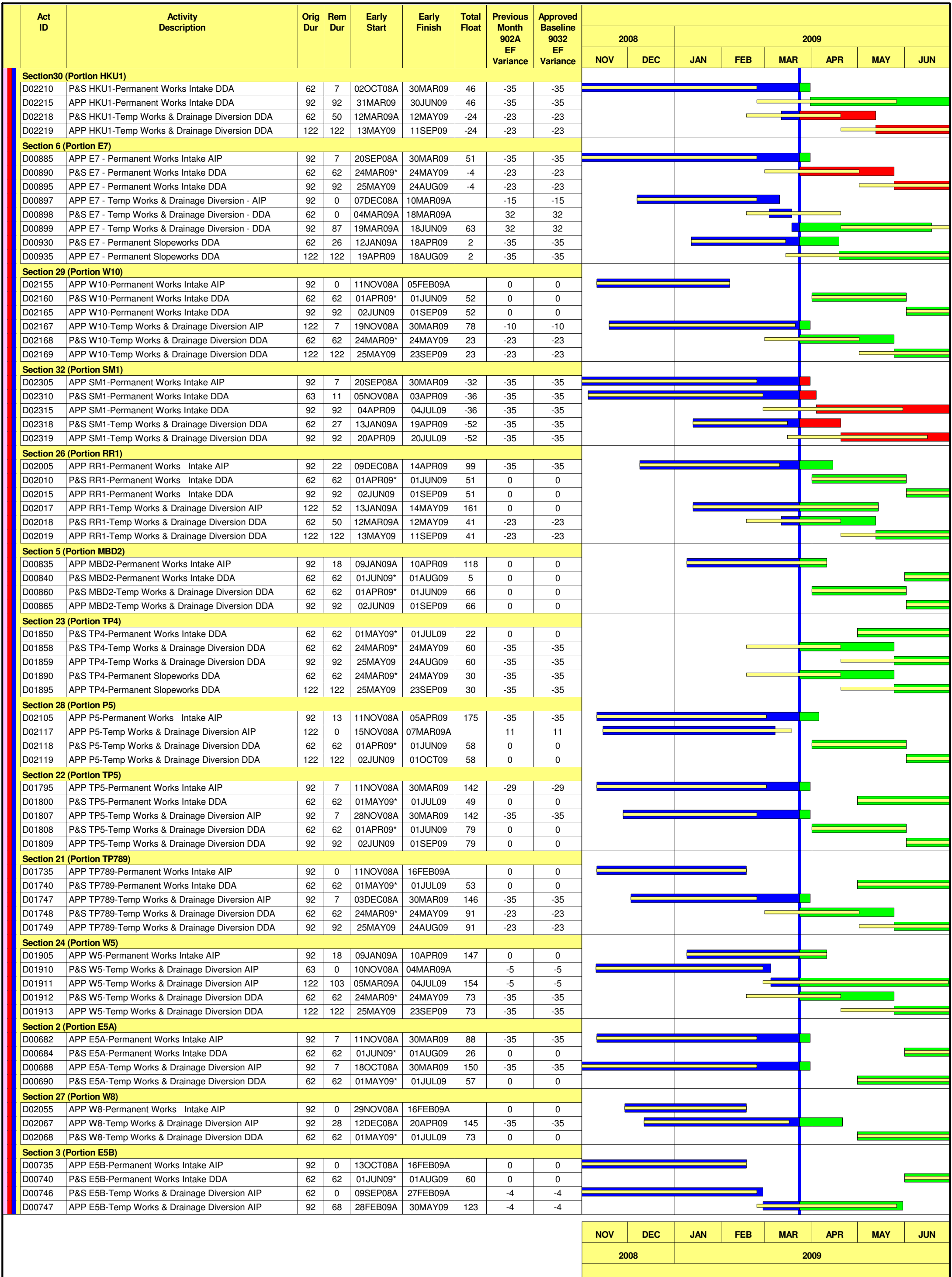
Act ID	Activity Description	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	Previous Month 902A EF Variance	Approved Baseline 9032 EF Variance	2008		2009						
									NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
HK West Drainage Project																	
CC01 - PRELIMINARIES & GENERAL REQUIREMENTS																	
Milestone																	
General																	
M1-1110	1.11-Complete of All Obligat's From 361to420d	0	0		05FEB09A		0	0	(MC 53) ◆								
M1-1120	1.12-Complete of All Obligat's From 421to480d	0	0		31MAR09*	0	0	0									
M1-1130	1.13-Complete of All Obligat's From 481to540d	0	0		31MAY09*	0	0	0									
M1-1430	1.43-Acceptance of Monthly Report on TDMS(14M)	0	0		23MAR09*	-51	-35	-35									
M1-1440	1.44-Acceptance of Monthly Report on TDMS(15M)	0	0		23MAR09*	-23	-23	-23									
M1-1450	1.45-Acceptance of Monthly Report on TDMS(16M)	0	0		31MAR09*	0	0	0									
M1-1460	1.46-Acceptance of Monthly Report on TDMS(17M)	0	0		30APR09*	0	0	0									
M1-1470	1.47-Acceptance of Monthly Report on TDMS(18M)	0	0		31MAY09*	0	0	0									
CC02 - DESIGN & DESIGN CHECKING OF THE WORKS																	
Design Stage																	
Section 1 (Eastern Portal)																	
D00255	APP East P Temp Drainage Divrsn Main Stream DDA	90	7	29NOV08A	30MAR09	1	-20	-20									
D00275	APP Cofferdam for Intake Shaft DDA	42	7	21MAY08A	30MAR09	-360	-35	-35									
D00278	P&S Reinst Perm Slope at Coff Intake Shaft DDA	63	63	01APR09*	02JUN09	29	0	0									
D00279	APP Reinst Perm Slope at Coff Intake Shaft DDA	92	92	03JUN09	02SEP09	29	0	0									
D00282	APP Temp&Perm Supt EP Non-TBM Tuntl to ch250 AIP	42	7	13SEP08A	30MAR09	-175	-35	-35									
D00284	APP Temp Supt EP Non-TBM Tunnel to Ch250 - DDA	30	0	05NOV08A	30JAN09A		0	0									
D00286	P&S Perm Supt EP Non-TBM Tunnel to Ch250 - DDA	40	0	20JAN09A	31JAN09A		0	0									
D00287	APP Perm Supt EP Non-TBM Tunnel to Ch250 - DDA	92	41	01FEB09A	03MAY09	472	0	0									
D02334	APP East P Temp Drainage Divn Side Stream-DDA	76	7	28MAR08A	30MAR09	1	-35	-35									
D02374	APP Temp Drain Divrsn Main Stream ELS - DDA	52	7	29NOV08A	30MAR09	1	-35	-35									
Section 1 (Western Portal)																	
D00375	APP West Portal ELS for Soft Ground Tunnel DDA	42	7	12JUN08A	30MAR09	-250	-35	-35									
Section 1 Dropshaft																	
D00600	P&S Softground Excav for Dropshaft W5 AIP	63	63	01APR09*	02JUN09	251	0	0									
D00601	APP Softground Excav for Dropshaft W5 AIP	92	92	03JUN09	02SEP09	251	0	0									
D00612	P&S Softground Excav for Dropshaft RR1 AIP	63	63	01APR09*	02JUN09	175	0	0									
D00613	APP Softground Excav for Dropshaft RR1 AIP	92	92	03JUN09	02SEP09	175	0	0									
D00624	P&S Softground Excav for Dropshaft P5 AIP	63	63	01JUN09*	02AUG09	141	0	0									
D00630	P&S Dropshaft Temp Rock Supt (Excl. W0) AIP	70	7	23OCT08A	30MAR09	-2	-35	-35									
D00633	APP Dropshaft Temp Rock Supt (Excl. W0) AIP	91	91	31MAR09	29JUN09	-2	-35	-35									
D00636	P&S Dropshaft Temp Rock Supt (Excl. W0) DDA	60	60	24MAR09*	22MAY09	215	-35	-35									
D00639	APP Dropshaft Temp Rock Supt (Excl. W0) DDA	92	92	23MAY09	22AUG09	215	-35	-35									
D00642	P&S Dropshaft Permanent Lining (Excl W0) AIP	45	25	31DEC08A	17APR09	9	-35	-35									
D00645	APP Dropshaft Permanent Lining (Excl W0) AIP	47	47	18APR09	03JUN09	9	-35	-35									
D00648	P&S Dropshaft Permanent Lining(Excl W0) DDA	62	62	01APR09*	01JUN09	535	0	0									
D00651	APP Dropshaft Permanent Lining(Excl W0) DDA	92	92	02JUN09	01SEP09	535	0	0									
D00663	APP Dropshaft & SC at W0 Temp Rock Supt DDA	42	17	23JAN09A	09APR09	-109	-35	-35									
D00665	P&S Dropshaft&SC at W0 Temp Rock Supt AIP VO10	38	6	16JAN09A	29MAR09	-133	0	-35									
D00667	APP Dropshaft&SC at W0 Temp Rock Supt AIP VO10	21	21	30MAR09	19APR09	-112	0	-35									
D00669	P&S Dropshaft&SC at W0 Temp Rock Supt DDA VO10	35	35	30MAR09	03MAY09	-133	0	-35									
D00671	APP Dropshaft&SC at W0 Temp Rock Supt DDA VO10	7	7	04MAY09	10MAY09	-133	0	-35									
Section 1 (Portion W0)																	
D01150	P&S W0-Permanent Works Intake DDA	50	7	23AUG08A	30MAR09	-134	-35	-35									
D01155	APP W0-Permanent Works Intake DDA	42	42	31MAR09	11MAY09	-134	15	-35									
D01160	P&S W0-Permanent Works Intake AIP VO10	38	6	16JAN09A	29MAR09	-133	0	-35									
D01162	APP W0-Permanent Works Intake AIP VO10	21	21	30MAR09	19APR09	-112	0	-35									
D01164	P&S W0-Permanent Works Intake DDA VO10	35	35	30MAR09	03MAY09	-133	0	-35									
D01166	APP W0-Permanent Works Intake DDA VO10	7	7	04MAY09	10MAY09	-133	0	-35									
D01178	P&S W0-Temp Works & Drainage Diversion DDA	90	7	27AUG08A	30MAR09	-127	0	-35									
D01180	APP W0-Temp Works & Drainage Diversion DDA	92	92	31MAR09*	30JUN09	-127	0	-35									
D01182	P&S W0-Temp Works&Drainage Diversion AIP VO10	38	6	16JAN09A	29MAR09	-130	0	-35									
D01184	APP W0-Temp Works&Drainage Diversion AIP VO10	21	21	30MAR09	19APR09	-112	0	-35									
D01186	P&S W0-Temp Works&Drainage Diversion DDA VO10	56	0	20JAN09A	12MAR09A		0	3									
D01188	APP W0-Temp Works&Drainage Diversion DDA VO10	21	10	13MAR09A	02APR09	-130	0	3									
Section 7 (Portion THR2)																	
D00950	P&S THR2-Permanent Works Intake DDA	62	30	20FEB09A	22APR09	-40	-3	-3									
D00955	APP THR2-Permanent Works Intake DDA	92	92	23APR09	23JUL09	-40	-3	-3									
D00958	P&S THR2-Temp Works & Drainage Diversion DDA	62	30	20FEB09A	22APR09	-40	-3	-3									
D00959	APP THR2-Temp Works & Drainage Diversion DDA	92	92	23APR09	23JUL09	-40	-3	-3									
Section 4 (Portion MB16)																	
D00785	APP MB16-Permanent Works Intake AIP	92	0	13OCT08A	16FEB09A		0	0									
D00790	P&S MB16-Permanent Works Intake DDA	62	62	24MAR09*	24MAY09	-28	-23	-23									
D00795	APP MB16-Permanent Works Intake DDA	92	92	25MAY09	24AUG09	-28	-23	-23									
D00797	APP MB16-Temp Works & Drainage Diversion - AIP	92	0	13OCT08A	04MAR09A		-9	-9									
D00798	P&S MB16-Temp Works & Drainage Diversion - DDA	62	11	01DEC08A	03APR09	23	-35	-35									
D00799	APP MB16-Temp Works & Drainage Diversion - DDA	92	92	04APR09	04JUL09	23	-35	-35									
D00826	P&S MB16-Permanent Slopeworks DDA	62	13	10DEC08A	05APR09	-9	-35	-35									
D00828	APP MB16-Permanent Slopeworks DDA	122	122	06APR09	05AUG09	-9	-35	-35									
Section 31 (Portion PFLR1)																	
D02255	APP PFLR1-Permanent Works Intake AIP	92	7	20SEP08A	30MAR09	-47	-35	-35									
D02260	P&S PFLR1-Permanent Works Intake DDA	62	62	31MAR09*	31MAY09	-47	-35	-35									
D02265	APP PFLR1-Permanent Works Intake DDA	92	92	01JUN09	31AUG09	-47	-35	-35									
D02267	APP PFLR1-Temp Works & Drainage Diversion AIP	92	7	10DEC08A	30MAR09	-47	-20	-20									
D02268	P&S PFLR1-Temp Works & Drainage Diversion DDA	62	62	31MAR09*	31MAY09	-47	-20	-20									
D02269	APP PFLR1-Temp Works & Drainage Diversion DDA	92	92	01JUN09	31AUG09	-47	-20	-20									

NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
2008				2009			

Start Date	30NOV07		Early Bar
Finish Date	14MAY12		Previous Month (902A)
Data Date	24MAR09		Progress Bar
Run Date	28MAR09 03:57		Critical Activity

903A
 Sheet 1 of 9
Design & Construction of HK, West Drainage Tunnel
 Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
MARCH/2009 MONTHLY REPORT

Date	Revision	Checked	Approved



Start Date	30NOV07
Finish Date	14MAY12
Data Date	24MAR09
Run Date	28MAR09 03:57





	Early Bar
	Previous Month (902A)
	Progress Bar
	Critical Activity

903A
 Sheet 2 of 9
Design & Construction of HK, West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
MARCH/2009 MONTHLY REPORT

Date	Revision	Checked	Approved

Act ID	Activity Description	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	Previous Month 902A EF Variance	Approved Baseline 9032 EF Variance	2008		2009						
									NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
Section 3 (Portion E5B)																	
D00748	P&S E5B-Temp Works & Drainage Diversion DDA	62	62	01MAY09*	01JUL09	91	0	0									
Section 20 (Portion M3)																	
D01675	APP M3-Permanent Works Intake AIP	92	18	09JAN09A	10APR09	268	0	0									
D01686	P&S M3-Temp Works & Drainage Diversion AIP	62	7	08OCT08A	30MAR09	126	-35	-35									
D01687	APP M3-Temp Works & Drainage Diversion AIP	92	92	31MAR09	30JUN09	126	-35	-35									
D01688	P&S M3-Temp Works & Drainage Diversion DDA	62	62	01MAY09*	01JUL09	125	0	0									
D01715	APP M3-Permanent Slopeworks AIP	122	47	08JAN09A	09MAY09	148	0	0									
D01720	P&S M3-Permanent Slopeworks DDA	62	62	01JUN09*	01AUG09	64	0	0									
Section 19 (Portion MA17)																	
D01615	APP MA17-Permanent Works Intake AIP	92	18	09JAN09A	10APR09	159	0	0									
D01626	P&S MA17-Temp Works & Drainage Diversion AIP	63	0	05NOV08A	04MAR09A		-9	-9									
D01627	APP MA17-Temp Works & Drainage Diversion AIP	92	73	05MAR09A	04JUN09	104	-9	-9									
D01628	P&S MA17-Temp Works & Drainage Diversion DDA	62	62	05JUN09*	05AUG09	104	-9	-9									
D01655	APP MA17-Permanent Slopeworks AIP	122	0	09JAN09A	05FEB09A		0	0									
D01660	P&S MA17-Permanent Slopeworks DDA	62	62	01MAY09*	01JUL09	109	0	0									
Section 15 (Portion W3)																	
D01405	APP W3-Permanent Works Intake AIP	92	32	23JAN09A	24APR09	203	0	0									
D01416	P&S W3-Temp Works & Drainage Diversion AIP	62	0	06NOV08A	27FEB09A		-4	-4									
D01417	APP W3-Temp Works & Drainage Diversion AIP	92	68	28FEB09A	30MAY09	229	-4	-4									
D01418	P&S W3-Temp Works & Drainage Diversion DDA	62	62	24MAR09*	24MAY09	235	-23	-23									
D01419	APP W3-Temp Works & Drainage Diversion DDA	92	92	31MAY09	30AUG09	229	-4	-4									
Section 17 (Portion MA14)																	
D01505	APP MA14-Permanent Works Intake AIP	92	18	09JAN09A	10APR09	193	0	49									
D01516	P&S MA14-Temp Works & Drainage Diversion AIP	62	0	07NOV08A	03MAR09A		-8	-5									
D01517	APP MA14-Temp Works & Drainage Diversion AIP	92	72	04MAR09A	03JUN09	201	-8	-5									
D01518	P&S MA14-Temp Works & Drainage Diversion DDA	62	62	24MAR09*	24MAY09	211	-35	-35									
D01519	APP MA14-Temp Works & Drainage Diversion DDA	92	92	04JUN09	03SEP09	201	-8	-5									
D01545	APP MA14-Permanent Slopeworks AIP	122	48	09JAN09A	10MAY09	320	0	49									
D01550	P&S MA14-Permanent Slopeworks DDA	62	62	24MAR09*	24MAY09	181	-23	-23									
D01555	APP MA14-Permanent Slopeworks DDA	122	122	25MAY09	23SEP09	181	-23	-23									
Section 18 (Portion MA15)																	
D01565	APP MA15-Permanent Works Intake AIP	92	35	09JAN09A	27APR09	180	-17	-17									
D01580	P&S MA15-Temp Works & Drainage Diversion AIP	62	0	01NOV08A	03MAR09A		-8	-8									
D01585	APP MA15-Temp Works & Drainage Diversion AIP	92	72	04MAR09A	03JUN09	143	-8	-8									
D01590	P&S MA15-Temp Works & Drainage Diversion DDA	62	62	04JUN09*	04AUG09	143	-3	-3									
Section 10 (Portion DG1)																	
D01095	APP DG1-Permanent Works Intake AIP	92	7	29NOV08A	30MAR09	272	-30	-30									
D01107	APP DG1-Temp Works & Drainage Diversion AIP	92	22	13JAN09A	14APR09	257	0	0									
D01108	P&S DG1-Temp Works & Drainage Diversion DDA	63	63	01MAY09*	02JUL09	178	0	0									
Section 9 (Portion HR1)																	
D01045	APP HR1-Permanent Works Intake AIP	92	7	11NOV08A	30MAR09	277	-35	-35									
D01056	P&S HR1-Temp Works & Drainage Diversion AIP	62	62	24MAR09*	24MAY09	130	-35	-35									
D01057	APP HR1-Temp Works & Drainage Diversion AIP	92	92	25MAY09	24AUG09	130	-35	-35									
Section 14 (Portion BR6)																	
D01355	APP BR6-Permanent Works Intake AIP	92	33	24JAN09A	25APR09	230	0	0									
D01370	P&S BR6-Temp Works & Drainage Diversion AIP	62	33	23FEB09A	25APR09	138	-6	-6									
D01375	APP BR6-Temp Works & Drainage Diversion AIP	92	92	26APR09	26JUL09	138	-6	-6									
Section 12 (Portion W1)																	
D01255	APP W1-Permanent Works Intake AIP	92	18	09JAN09A	10APR09	279	0	0									
D01266	P&S W1-Temp Works & Drainage Diversion AIP	62	0	04NOV08A	27FEB09A		-4	-4									
D01267	APP W1-Temp Works & Drainage Diversion AIP	92	68	28FEB09A	30MAY09	291	-4	-4									
D01268	P&S W1-Temp Works & Drainage Diversion DDA	62	62	01APR09*	01JUN09	289	0	0									
D01269	APP W1-Temp Works & Drainage Diversion DDA	92	92	02JUN09	01SEP09	289	0	0									
Section 8 (Portion GL1)																	
D00995	APP GL1-Permanent Works Intake AIP	92	0	29NOV08A	16FEB09A		0	0									
D01007	APP GL1-Temp Works & Drainage Diversion AIP	92	7	23NOV08A	30MAR09	352	-35	-35									
D01008	P&S GL1--Temp Works & Drainage Diversion DDA	62	62	01MAY09*	01JUL09	259	0	0									
Section 25 (Portion CR1)																	
D01955	APP CR1-Permanent Works Intake AIP	92	18	09JAN09A	10APR09	436	0	0									
D01966	P&S CR1-Temp Works & Drainage Diversion AIP	63	0	05DEC08A	02MAR09A		-7	-7									
D01967	APP CR1-Temp Works & Drainage Diversion AIP	122	101	03MAR09A	02JUL09	323	-7	-7									
Section 13 (Portion BR5)																	
D01305	APP BR5-Permanent Works Intake AIP	92	18	09JAN09A	10APR09	354	0	0									
D01316	P&S BR5-Temp Works & Drainage Diversion AIP	62	0	21NOV08A	10FEB09A		0	0									
D01317	APP BR5-Temp Works & Drainage Diversion AIP	92	51	11FEB09A	13MAY09	259	0	0									
Section 11 (Portion BR4)																	
D01195	APP BR4-Permanent Works Intake AIP	92	17	08JAN09A	09APR09	355	0	0									
D01207	APP BR4-Temp Works & Drainage Diversion AIP	92	7	12DEC08A	30MAR09	427	-17	-17									
D01208	P&S BR4-Temp Works & Drainage Diversion DDA	62	62	24MAR09*	24MAY09	372	-35	-35									
D01209	APP BR4-Temp Works & Drainage Diversion DDA	92	92	25MAY09	24AUG09	372	-35	-35									
D01240	P&S BR4-Permanent Slopeworks DDA	62	62	24MAR09*	24MAY09	410	-35	-35									
D01245	APP BR4-Permanent Slopeworks DDA	122	122	25MAY09	23SEP09	410	-35	-35									
Section 16 (Portion B2)																	
D01455	APP B2-Permanent Works Intake AIP	92	18	09JAN09A	10APR09	437	0	0									
D01466	P&S B2-Temp Works & Drainage Diversion AIP	62	0	25NOV08A	03MAR09A		-8	-8									
D01467	APP B2-Temp Works & Drainage Diversion AIP	92	72	04MAR09A	03JUN09	383	-8	-8									
D01468	P&S B2-Temp Works & Drainage Diversion DDA	62	62	04JUN09*	04AUG09	383	-3	-3									
Adits & Stilling Chambers																	
D00530	P&S Adits & Stilling Chamber Temp Support DDA	63	14	03FEB09A	06APR09	85	0	0									
D00535	APP Adits & Stilling Chamber Temp Support DDA	122	122	07APR09	06AUG09	85	0	0									
D00540	P&S Adits Permanent Lining AIP	33	0	31OCT08A	13MAR09A		-18	-18									

NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
2008				2009			

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903A Sheet 3 of 9

Design & Construction of HK, West Drainage Tunnel
Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
MARCH/2009 MONTHLY REPORT

Date	Revision	Checked	Approved

Act ID	Activity Description	Orig Dur	Rem Dur	Early Start	Early Finish	Total Float	Previous Month 902A EF Variance	Approved Baseline 9032 EF Variance	2008		2009								
									NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN			
Site Installation - Phase 2																			
WPT0492	Belt Cassette Assembly End parts Stage 2	2	2	03APR09	06APR09	-61	0	-7											
WPT0592	Foundation for 25 T crane external of shaft area	4	0	21JAN09A	24JAN09A		0	0											
WPT0594	Steel Frame Erection beside cyberport bridge	9	0	29JAN09A	07FEB09A		0	0											
WPT0597	Steel Frame Erection Yard area25T crane Stage 2	10	10	24MAR09	03APR09	-42	0	-1											
WPT0600	25 T crane delivery	0	0	03APR09*		-52	0	0											
WPT0670	25 T installation	5	5	03APR09	09APR09	-52	0	0											
WPT0690	Test and Commissioning	6	6	15APR09	21APR09	-52	0	0											
WPT0705	Stage 2 from Area 1 to Below Bridge	16	0	12JAN09A	02FEB09A		0	0											
WPT0707	Stage 3 - from bridge to retaining wall	5	0	16MAR09A	20MAR09A		0	-13											
WPT0708	Partial delivery for TBM Starting(S1+ few rings)	0	0	28FEB09A			0	-1											
WPT0710	Set up supports for segment in yard	12	0	09MAR09A	18MAR09A		0	9											
WPT0715	Spoil Basin Excavation + Concrete	11	0	09JAN09A	05MAR09A		0	-12											
WPT0717	Excavation & casting Spoil Basin Retaining wall	27	0	02MAR09A	20MAR09A		0	-18											
WPT0719	Conveyor Separating Wall	24	12	21MAR09A	07APR09	-57	0	-21											
WPT0720	First delivery of segments to the yard	0	0	18MAR09A			0	1											
WPT0750	Ring preparation and delivery for TBM test	3	0	19MAR09A	21MAR09A		0	0											
WPT0770	Set up area for Pipes and rails	15	15	24MAR09	15APR09	-54	0	5											
WPT0800	Install Rails A1&2/Bay1&2	6	0	06FEB09A	12FEB09A		0	9											
WPT0805	Install Rails Bay3+50m assemb&Transfer Shield	7	0	26FEB09A	05MAR09A		0	0											
WPT0835	Fabrication + pumping test on site	10	10	24MAR09*	03APR09	-61	0	-30											
WPT0837	Setup Equipment on site	10	10	06APR09	21APR09	-61	0	0											
WPT0855	Fabrication in Europe + factory testing	42	0	14JAN09A	24FEB09A		0	0											
WPT0857	Delivery to HongKong	30	7	25FEB09A	31MAR09	-53	0	0											
WPT0859	Install on Gantry BU 10B + Tests	5	5	16APR09	21APR09	-61	0	0											
WPT1035	Site installation Permanent Wet Sep Stage 1	18	18	24MAR09*	18APR09	-73	0	-25											
WPT1037	Site installation Permanent Wet Sep Stage 2	12	12	17APR09	04MAY09	-73	0	-23											
WPT1050	Commissioning	4	4	05MAY09	08MAY09	-73	0	-23											
WPT1090	Set up equipment below bridge	25	0	29JAN09A	26FEB09A		0	0											
WPT1092	Set up Water tank & Booster pumps	3	3	24MAR09	26MAR09	-76	0	-21											
WPT1094	Set up return loop from tank from TBM(hot water)	8	1	16MAR09A	27MAR09	-76	0	-14											
WPT1096	Commissioning water booster pumps + chiller	3	3	26MAR09	28MAR09	-76	0	-12											
WPT1170	Pipes and electrical lines Installation	44	0	08JAN09A	05MAR09A		0	-2											
WPT1190	Commissioning for Tunnel installation (air,water)	5	5	24MAR09	28MAR09	-76	0	-16											
WPT1235	Compressors Installation and commissioning	5	5	24MAR09*	28MAR09	-76	0	-26											
WPT1260	Temporary Ventilation Installation & Commission	21	21	24MAR09	22APR09	-52	0	-30											
WPT1505	Civil works on yard+Temp transfer installation	13	13	24MAR09*	08APR09	-54	0	-23											
WPT1540	Pea Gravel tank into shaft install&Commissioning	6	6	09APR09	20APR09	-54	0	-23											
WPT1560	Pea Gravel transfer conveyors to the tank	7	7	16APR09	23APR09	-54	0	-23											
WPT1770	Install noise cover along Cyberport bridge area	12	0	09FEB09A	21MAR09A		0	-24											
WPT1780	Install Noise Cover below bridge	18	18	24MAR09	18APR09	-73	0	-25											
WPT1790	Install Noise cover pea gravel/spoil basin side	26	26	16APR09	20MAY09	-73	0	-22											
Milestone																			
Section 1 (Western Portal)																			
M6-1082	6.07B-Excavation(Arch-shaped Trans Tunnel) 100%	0	0		05FEB09A		0	0											
CC7 - PART OF SECTION 1 OF THE WORKS (PORTION W0)																			
Construction																			
Preliminary Works																			
S010160	Implement Traffic Divn Scheme-(W0)	7	0	29DEC08A	30JAN09A		0	0											
Preparation Works																			
S010820	Tree Pruning	60	0	17DEC08A	17FEB09A		0	0											
S010855	Hoarding Erection East Side	15	0	15JAN09A	25FEB09A		0	0											
S010860	Construct Footpath to public(East Side) EI012	12	0	05FEB09A	14FEB09A		0	0											
S010865	Construction of U-Channel & Pits East Side	7	0	09FEB09A	14FEB09A		0	0											
S010870	Construct Site Gate	3	0	04MAR09A	15MAR09A		0	-15											
S010905	Construction of Drain Pipe for Site Discharge	3	0	02MAR09A	09MAR09A		0	-15											
S010910	Construction of Wheel Wash Basin	7	0	25FEB09A	09MAR09A		0	-3											
S010915	Hoarding Erect West Side incl Temp 2.4m hoarding	30	2	19FEB09A	25MAR09	-99	0	6											
S010920	Construction of U-Channel & Pits West Side	23	2	24MAR09	25MAR09	-99	0	6											
S010925	Removal of Garden Lighting	3	0	12MAR09A	14MAR09A		0	15											
S010930	Install Geotech Monitoring Instruments-(W0)	6	2	19MAR09A	25MAR09	-99	0	6											
S010945	Tree Transplant	3	0	16FEB09A	18FEB09A		0	0											
S010950	Place Concrete Paving (A193 Mesh)	10	0	19FEB09A	21MAR09A		0	-17											
Intakes - External Structures (Stage1)																			
S010188	Subcontract Procurement	56	13	09FEB09A	05APR09	-133	0	0											
S010190	Cofferdam Wall Driving-(W0)	73	73	06APR09	15JUL09	-107	-41	0											
S010220	Pre-drilling & Grouting Works-(W0)	48	48	06APR09	11JUN09	-52	-64	0											
Milestone																			
Section 1 (Portion W0)																			
M7-1010	7.01-Pre-drilling&Grouting Works(Dropshaft)	0	0		11JUN09	930	-87	0											
CC8 - SECTION 2 OF THE WORKS (PORTION E5A)																			
Construction																			
Preliminary Works																			
S020040	Notify,Coord&Obtain Permit-Utility Prov - E5A	240	189	19JAN09A	26NOV09	6	-91	0											
S020100	Notify SO for Portion Possession - E5A	0	0		04JUN09*	0	0	0											
S020110	25 wks prior to Portion Possess Date-(E5A)	175	175	05JUN09	26NOV09	0	0	0											
S020116	P & S Environmental Base Monitoring Report(E5A)	12	0	28FEB09A	13MAR09A		-10	-10											
CC9 - SECTION 3 OF THE WORKS (PORTION E5B)																			
Construction																			
Preliminary Works																			
S030020	Notify,Coord&Obtain Permit-Utility Prov - E5B	265	142	24OCT08A	29SEP09	74	1	0											
S030120	P & S Tree Survey Report (E5B)	6	0	28FEB09A	06MAR09A		-10	-10											
									NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN			
									2008		2009								

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█ Early Bar
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903A
 Sheet 6 of 9
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									NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
CC10-SECTION 4 OF THE WORKS (PORTION MB16)																
Construction																
Preliminary Works																
S040110	25 wks prior to Portion Possess Date-(MB16)	175	58	27NOV08A	20MAY09	37	28	28								
CC11-SECTION 5 OF THE WORKS (PORTION MBD2)																
Construction																
Preliminary Works																
S050030	Notify,Coord&Obtain Permit-Utility Prov - MBD2	149	127	19JAN09A	10SEP09	44	-29	-30								
S050100	Notify SO for Portion Possession - MBD2	0	0		14MAY09*	0	0	0								
S050110	25 wks prior to Portion Possess Date-(MBD2)	175	175	15MAY09	05NOV09	0	0	0								
S050120	P & S Tree Survey Report (MBD2)	6	6	24MAR09	30MAR09	165	-30	-30								
S050125	TMLG submission, coordination & Approval - MBD2	48	48	15MAY09	16JUL09	87	1	0								
CC12-SECTION 6 OF THE WORKS (PORTION E7)																
Construction																
Preliminary Works																
S060030	Notify,Coord&Obtain Permit-Utility Prov - E7	225	95	16OCT08A	30JUL09	16	1	0								
S060100	Notify SO for Portion Possession - E7	0	0		03FEB09A	0	0	0								
S060110	25 wks prior to Portion Possess Date-(E7)	175	126	03FEB09A	27JUL09	24	0	0								
CC13-SECTION 7 OF THE WORKS (PORTION THR2)																
Construction																
Preliminary Works																
S070110	25 wks prior to Portion Possess Date-(THR2)	175	58	27NOV08A	20MAY09	23	0	0								
S070120	P & S Tree Survey Report (THR2)	6	0	20FEB09A	26FEB09A	0	-3	-3								
S070150	Site Possession - THR2	0	0	13JUN09*		0	0	0								
S070160	Site Setting up/Mobilization-(THR2)	24	24	15JUN09	15JUL09	0	0	0								
S070180	Rail System & Overhead Gantry Installation	58	58	15JUN09	28AUG09	0	0	0								
Preparation Works																
S070190	Install Geotech Monitoring Instruments-(THR2)	6	6	15JUN09	20JUN09	26	0	0								
S070191	Existing Bldg & Structure(EBS) Survey - (THR2)	6	6	15JUN09	20JUN09	26	0	0								
Intakes - External Structures (Stage1)																
S070170	Temp Diversion Natural Stream(Drain)-(THR2)	24	24	15JUN09	15JUL09	34	0	0								
CC14-SECTION 8 OF THE WORKS (PORTION GL1)																
Construction																
Preliminary Works																
S080030	Notify,Coord&Obtain Permit-Utility Prov - GL1	364	311	19JAN09A	30APR10	35	1	0								
S080120	P & S Tree Survey Report (GL1)	6	0	04FEB09A	04FEB09A	0	0	0								
CC15-SECTION 9 OF THE WORKS (PORTION HR1)																
Construction																
Preliminary Works																
S090030	Notify,Coord&Obtain Permit-Utility Prov - HR1	315	192	24OCT08A	30NOV09	156	1	0								
S090120	P & S Tree Survey Report (HR1)	6	6	24MAR09	30MAR09	342	-30	-30								
CC16-SECTION 10 OF THE WORKS (PORTION DG1)																
Construction																
Preliminary Works																
S100116	P & S Environmental Base Monitoring Report(DG1)	12	0	19JAN09A	09FEB09A	0	0	0								
CC17-SECTION 11 OF THE WORKS (PORTION BR4)																
Construction																
Preliminary Works																
S110120	P & S Tree Survey Report (BR4)	6	0	29JAN09A	04FEB09A	0	0	0								
CC18-SECTION 12 OF THE WORKS (PORTION W1)																
Construction																
Preliminary Works																
S120120	P & S Tree Survey Report (W1)	6	6	24MAR09	30MAR09	345	-30	-30								
CC19-SECTION 13 OF WORKS (PORTION BR5)																
Construction																
Preliminary Works																
S130120	P & S Tree Survey Report (BR5)	6	1	04FEB09A	24MAR09	390	-30	-30								
CC20-SECTION 14 OF THE WORKS (PORTION BR6)																
Construction																
Preliminary Works																
S140030	Notify,Coord&Obtain Permit-Utility Prov - BR6	408	312	24NOV08A	03MAY10	9	-1	0								
S140116	P & S Environmental Base Monitoring Report(BR6)	12	0	19JAN09A	09FEB09A	0	0	0								
S140120	P & S Tree Survey Report (BR6)	6	6	24MAR09	30MAR09	315	-30	-30								
CC21-SECTION 15 OF THE WORKS (PORTION W3)																
Construction																
Preliminary Works																
S150030	Notify,Coord&Obtain Permit-Utility Prov - W3	359	262	24NOV08A	26FEB10	58	1	0								
S150120	P & S Tree Survey Report (W3)	6	0	12MAR09A	18MAR09A	0	-20	-20								
CC22-SECTION 16 OF THE WORKS (PORTION B2)																
Construction																
Preliminary Works																
S160120	P & S Tee Survey Report (B2)	6	0	12MAR09A	18MAR09A	0	-20	-20								
CC23-SECTION 17 OF THE WORKS (PORTION MA14)																
Construction																
Preliminary Works																
S170116	P & S Environmental Base Monitoring Report(MA14)	12	0	19JAN09A	09FEB09A	0	0	0								
S170119	P & S Tree Survey Report (MA14)	6	0	20FEB09A	26FEB09A	0	-3	-3								

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903A
 Sheet 7 of 9
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									NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN		
CC24-SECTION 18 OF THE WORKS (PORTION MA15)																		
Construction																		
Preliminary Works																		
S180116	P & S Environmental Base Monitoring Report(MA15)	12	12	24MAR09	07APR09	280	-30	-30										
S180120	P & S Tree Survey Report (MA15)	6	6	24MAR09	30MAR09	286	-18	-30										
CC25-SECTION 19 OF THE WORKS (PORTION MA17)																		
Construction																		
Preliminary Works																		
S190030	Notify,Coord&Obtain Permit-Utility Prov - MA17	312	216	24NOV08A	30DEC09	42	1	0										
S190120	P & S Tree Survey Report (MA17)	6	0	29JAN09A	04FEB09A		0	0										
CC26-SECTION 20 OF THE WORKS (PORTION M3)																		
Construction																		
Preliminary Works																		
S200120	P & S Tree Survey Report (M3)	6	0	12MAR09A	18MAR09A		-20	-20										
CC27-SECTION 21 OF THE WORKS (PORTION TP789)																		
Construction																		
Preliminary Works																		
S210100	Notify SO for Portion Possession - (TP789)	0	0		01JUN09*	0	0	0										
S210110	25 wks prior to Portion Possess Date-(TP789)	175	175	02JUN09	23NOV09	0	0	0										
CC28-SECTION 22 OF THE WORKS (PORTION TP5)																		
Construction																		
Preliminary Works																		
S220030	Notify,Coord&Obtain Permit-Utility Prov - TP5	265	142	24OCT08A	29SEP09	38	1	0										
S220100	Notify SO for Portion Possession - (TP5)	0	0		27MAY09*	-2	0	0										
S220110	25 wks prior to Portion Possess Date-(TP5)	175	175	28MAY09	18NOV09	-2	0	0										
S220120	P & S Tree Survey Report (TP5)	6	0	06FEB09A	17FEB09A		0	0										
CC29-SECTION 23 OF THE WORKS (PORTION TP4)																		
Construction																		
Preliminary Works																		
S230100	Notify SO for Portion Possession - (TP4)	0	0		30APR09*	0	0	0										
S230110	25 wks prior to Portion Possess Date-(TP4)	175	175	01MAY09	22OCT09	0	0	0										
S230125	TMLG submission, coordination & Approval - TP4	48	48	04MAY09	04JUL09	85	1	0										
CC30-SECTION 24 OF THE WORKS (PORTION W5)																		
Construction																		
Preliminary Works																		
S240030	Notify,Coord&Obtain Permit-Utility Prov - W5	239	142	24NOV08A	29SEP09	60	1	0										
S240100	Notify SO for Portion Possession - (W5)	0	0		12JUN09*	0	0	0										
S240110	25 wks prior to Portion Possess Date-(W5)	175	175	13JUN09	04DEC09	0	0	0										
S240114	Install ENV Instruments & start monitor(W5)	12	0	23FEB09A	08MAR09A		0	0										
S240116	P & S Environmental Base Monitoring Report(W5)	12	12	24MAR09	07APR09	190	-13	-13										
S240120	P & S Tree Survey Report (W5)	6	0	29JAN09A	04FEB09A		0	0										
S240125	TMLG submission, coordination & Approval - W5	48	48	15JUN09	15AUG09	95	0	0										
CC31-SECTION 25 OF THE WORKS (PORTION CR1)																		
Construction																		
Preliminary Works																		
S250030	Notify,Coord&Obtain Permit-Utility Prov - CR1	327	204	24OCT08A	14DEC09	150	1	0										
S250120	P & S Tree Survey Report (CR1)	6	0	12MAR09A	18MAR09A		-20	-20										
CC32-SECTION 26 OF THE WORKS (PORTION RR1)																		
Construction																		
Preliminary Works																		
S260030	Notify,Coord&Obtain Permit-Utility Prov - RR1	265	142	24OCT08A	29SEP09	20	1	0										
S260100	Notify SO for Portion Possession - (RR1)	0	0		29APR09*	0	0	0										
S260110	25 wks prior to Portion Possess Date-(RR1)	175	175	30APR09	21OCT09	0	0	0										
S260116	P & S Environmental Base Monitoring Report(RR1)	12	0	28FEB09A	13MAR09A		-10	-10										
S260120	P & S Tree Survey Report (RR1)	6	0	29JAN09A	10FEB09A		0	0										
CC33-SECTION 27 OF THE WORKS (PORTION W8)																		
Construction																		
Preliminary Works																		
S270030	Notify,Coord&Obtain Permit-Utility Prov - W8	278	178	20NOV08A	13NOV09	56	1	0										
S270114	Install ENV Instruments & start monitor(W8)	12	0	23FEB09A	08MAR09A		0	0										
S270116	P & S Environmental Base Monitoring Report(W8)	12	12	24MAR09	07APR09	222	-13	-13										
S270120	P & S Tree Survey Report (W8)	6	0	07FEB09A	17FEB09A		0	0										
CC34-SECTION 28 OF THE WORKS (PORTION P5)																		
Construction																		
Preliminary Works																		
S280030	Notify,Coord&Obtain Permit-Utility Prov - P5	247	142	14NOV08A	29SEP09	84	1	0										
S280100	Notify SO for Portion Possession - (P5)	0	0		05JUN09*	0	0	0										
S280110	25 wks prior to Portion Possess Date-(P5)	175	175	06JUN09	27NOV09	0	0	0										
S280121	TMLG submission, coordination & Approval - P5	48	48	08JUN09	08AUG09	124	0	0										
CC35-SECTION 29 OF THE WORKS (PORTION W10)																		
Construction																		
Preliminary Works																		
S290030	Notify,Coord&Obtain Permit-Utility Prov - W10	190	95	26NOV08A	30JUL09	52	1	0										
S290100	Notify SO for Portion Possession - (W10)	0	0		15APR09*	0	0	0										
S290110	25 wks prior to Portion Possess Date-(W10)	175	175	16APR09	07OCT09	0	0	0										
S290120	P & S Tree Survey Report (W10)	6	0	07FEB09A	18MAR09A		-23	-23										
CC36-SECTION 30 OF THE WORKS (PORTION HKU1)																		
Construction																		
Preliminary Works																		
S300020	Notify,Coord&Obtain Permit-Utility Prov - HKU1	192	70	24OCT08A	27JUN09	39	47	0										

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903A
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									Preliminary Works									
S300110	25 wks prior to Portion Possess Date-(HKU1)	175	113	21JAN09A	14JUL09	31	0	0										
CC37-SECTION 31 OF THE WORKS (PORTION PFLR1)																		
Construction																		
Preliminary Works																		
S310930	25 wks prior to Portion Possess Date-(PFLR1)	175	58	27NOV08A	20MAY09	55	28	28										
CC38-SECTION 32 OF THE WORKS (PORTION SM1)																		
Construction																		
Preliminary Works																		
S320930	25 wks prior to Portion Possess Date-(SM1)	175	57	26NOV08A	19MAY09	9	0	0										
S320950	Site Possession - SM1	0	0	29MAY09*		113	0	0										
S320970	Power & Water Points-(SM1)	24	24	29MAY09	29JUN09	86	0	0										
S320990	Implement TTM-(SM1)	12	12	10JUN09	25JUN09	86	0	0										
S321000	Cut/Fill/Place Concrete Block&Platform-(SM1)	12	12	29MAY09	12JUN09	95	0	0										
S321010	Hoarding/Fencing-(SM1)	12	12	29MAY09	12JUN09	92	0	0										
Preparation Works																		
S321030	Install Geotech Monitoring Instruments-(SM1)	3	3	15JUN09	17JUN09	92	0	0										

NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
2008				2009			

Start Date 30NOV07
 Finish Date 14MAY12
 Data Date 24MAR09
 Run Date 28MAR09 03:57

█ Early Bar
█ Previous Month (902A)
█ Progress Bar
█ Critical Activity

903A Sheet 9 of 9
Design & Construction of HK. West Drainage Tunnel
 Contract No. DC/2007/10
3 MONTH ROLLING PROGRAMME
MARCH/2009 MONTHLY REPORT

Date	Revision	Checked	Approved

**APPENDIX B
MONITORING REQUIREMENTS**

Appendix B - Environmental Impact Monitoring Requirements

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

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Noise	L_{eq} , L_{90} & L_{10} at 30 minute intervals during (0700 to 1900 on normal weekdays)	Once per week	<ul style="list-style-type: none"> • NC1 (True Light Middle School of Hong Kong) • NC1a (Outside True Light Middle School of Hong Kong (the nearest of staff accommodation) – for restricted hours (reference only)) • NC2 (The Legend) • NC3 (Outside Aegean Terrace) 	<ul style="list-style-type: none"> • NC1 - Facade measurement • NC1a – Façade 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	<ul style="list-style-type: none"> • Temperature (oC) • pH (pH unit) • Turbidity (NTU) • Water depth (m) • Salinity (mg/L) • Dissolved oxygen (DO) (mg/L and % of saturation) • Suspended solids (SS) (mg/L) 	Three times per week	<ul style="list-style-type: none"> • CE (830026E, 814956N) • CF (831778E, 812420N) • I1 (831088E, 813654N) • I2 (831105E, 813582N) • Intake A (831603E, 813044N) • Intake B (830606E, 814583N) 	<ul style="list-style-type: none"> • 3 water depths 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, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AQ1	345	500
AQ2	321	

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

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

Table C-3 Action and Limit Levels for Construction Noise

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

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

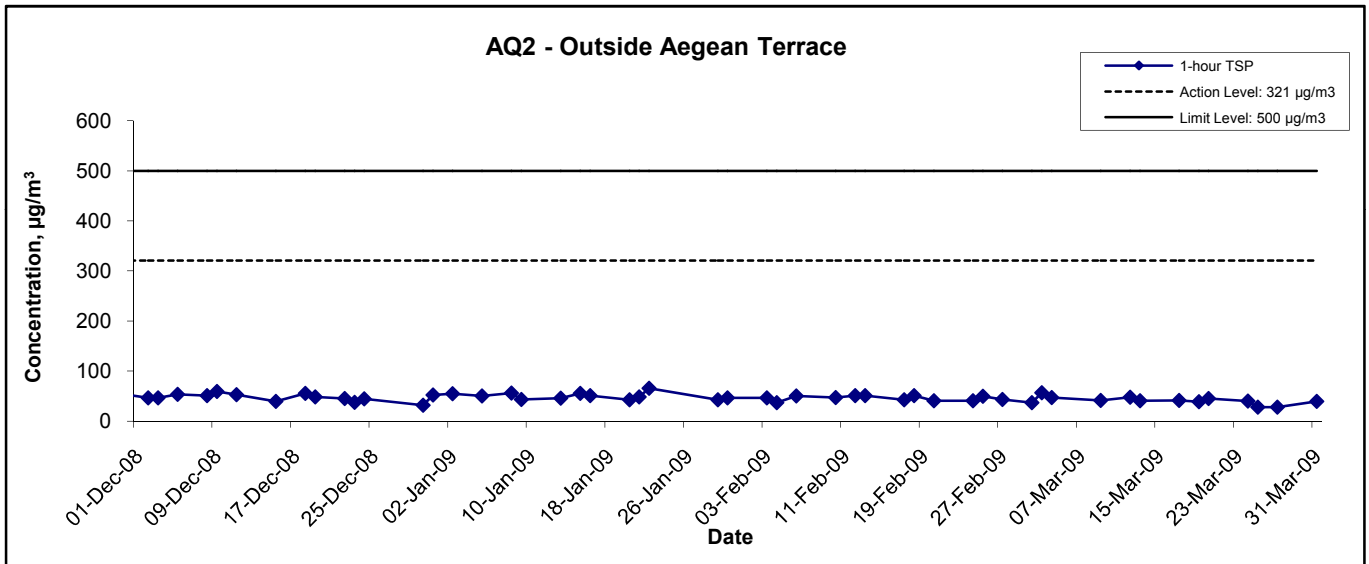
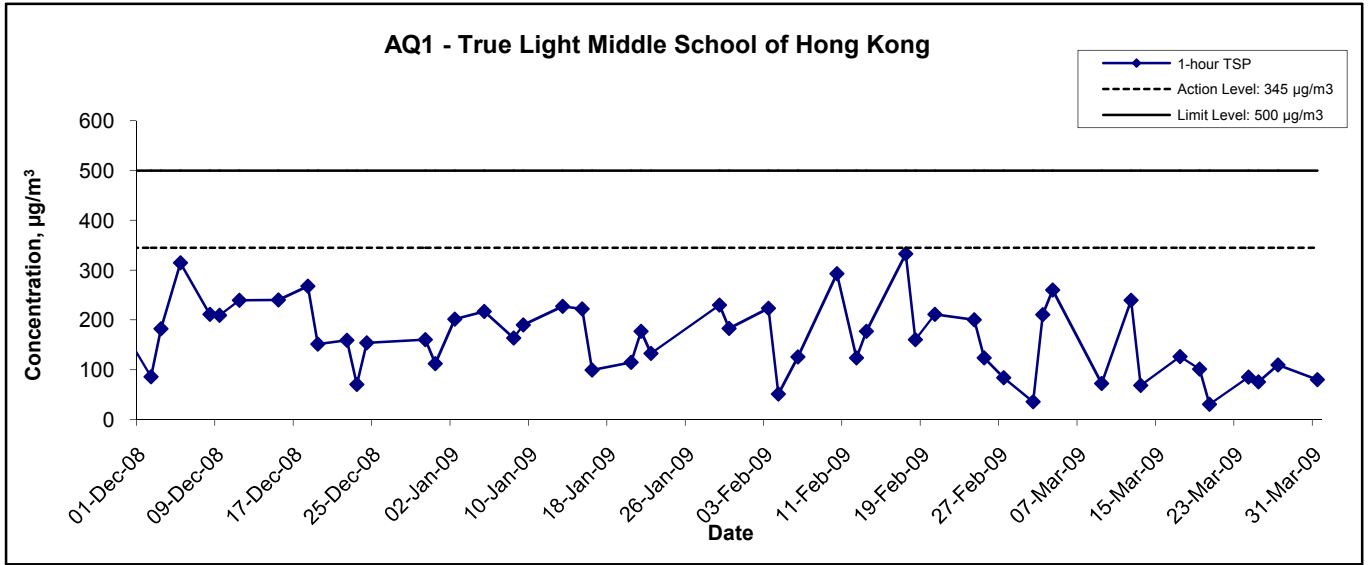
(**) to be selected based on Area Sensitivity Rating.

Table C-4 Action and Limit Levels for Water Quality

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

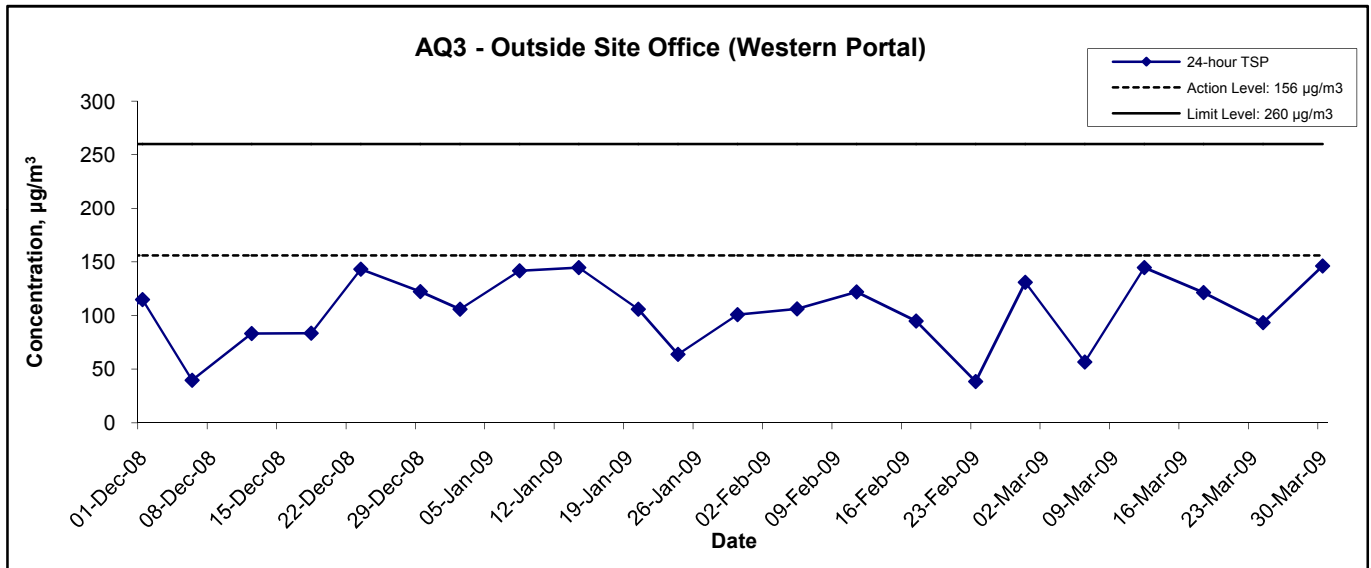
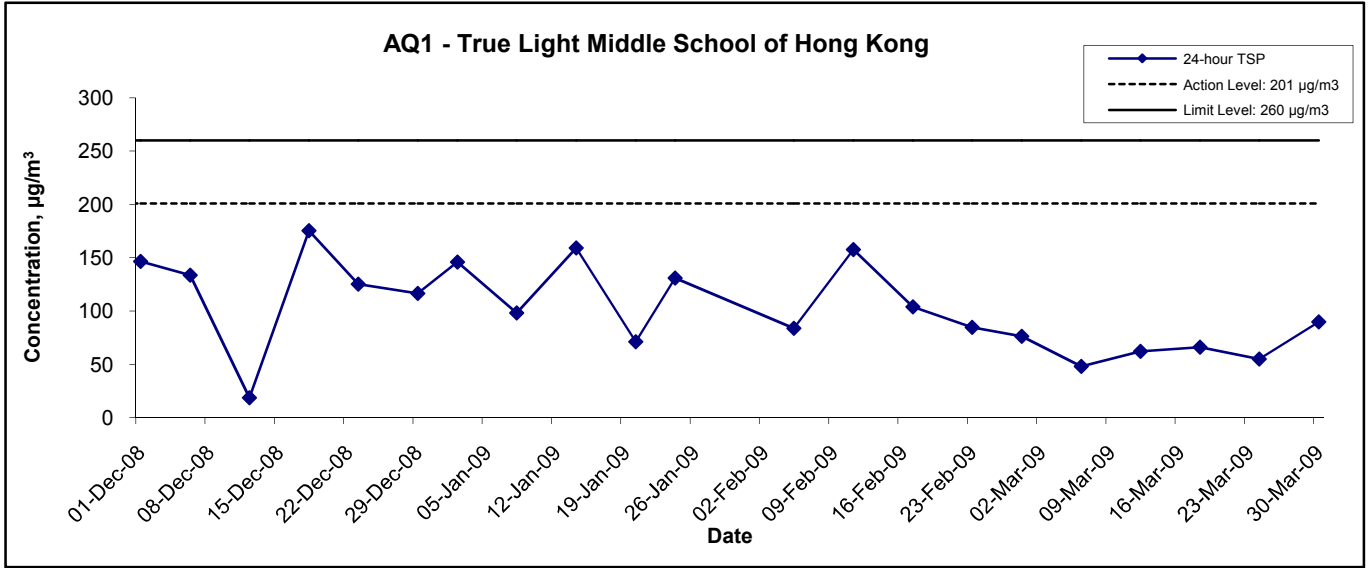
**APPENDIX D
GRAPHICAL PRESENTATION OF AIR
QUALITY MONITORING RESULTS**

1-hr TSP Concentration Levels



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Mar 09	Appendix D	

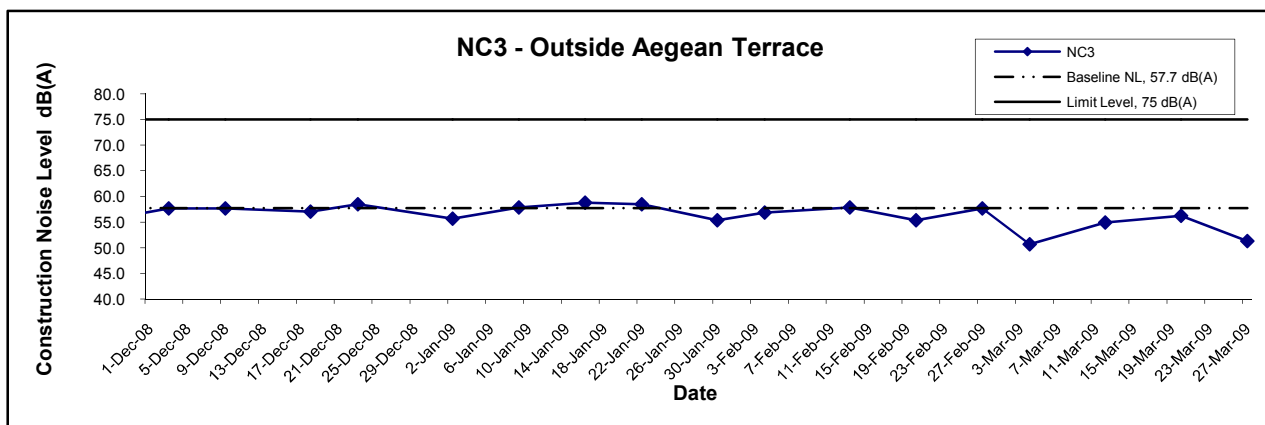
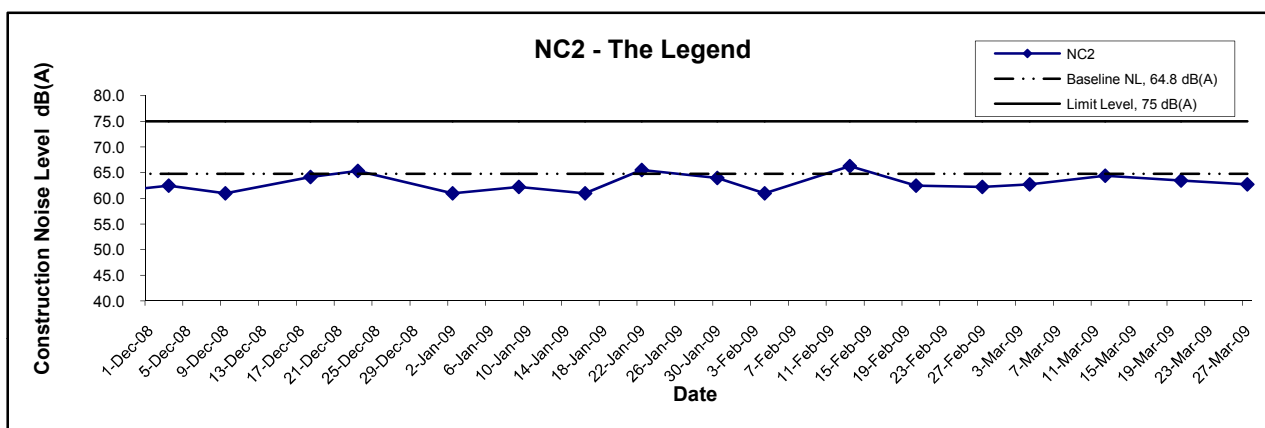
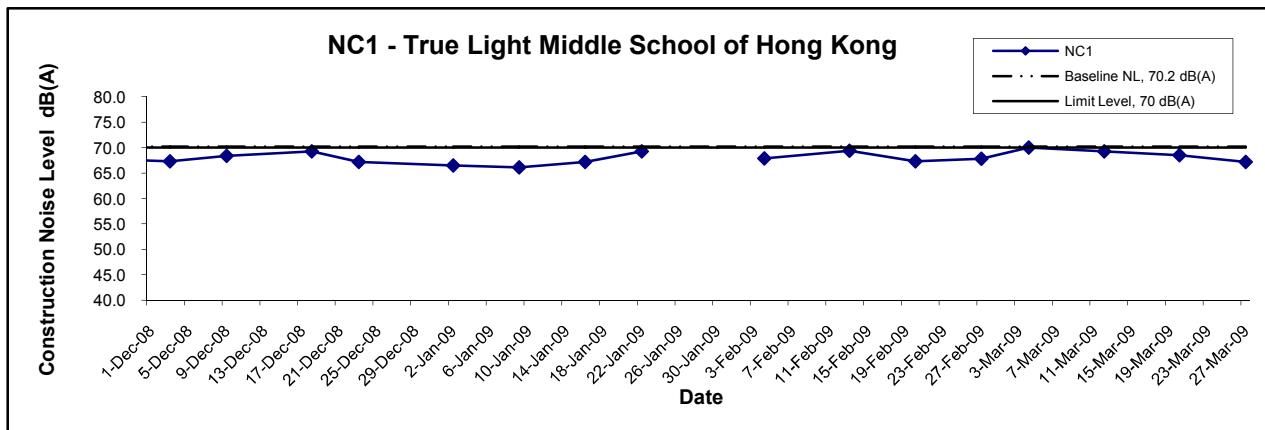
24-hr TSP Concentration Levels



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Mar 09	Appendix D	

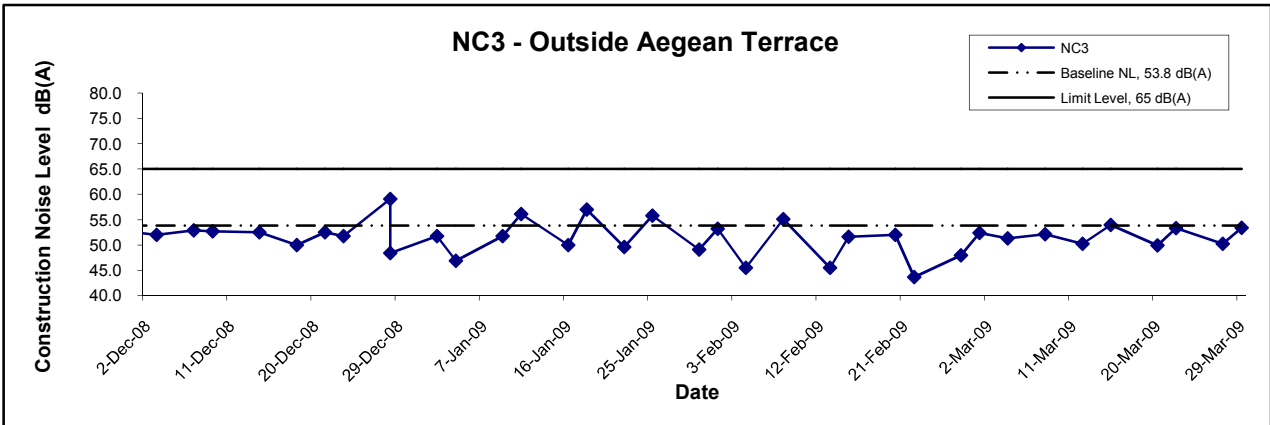
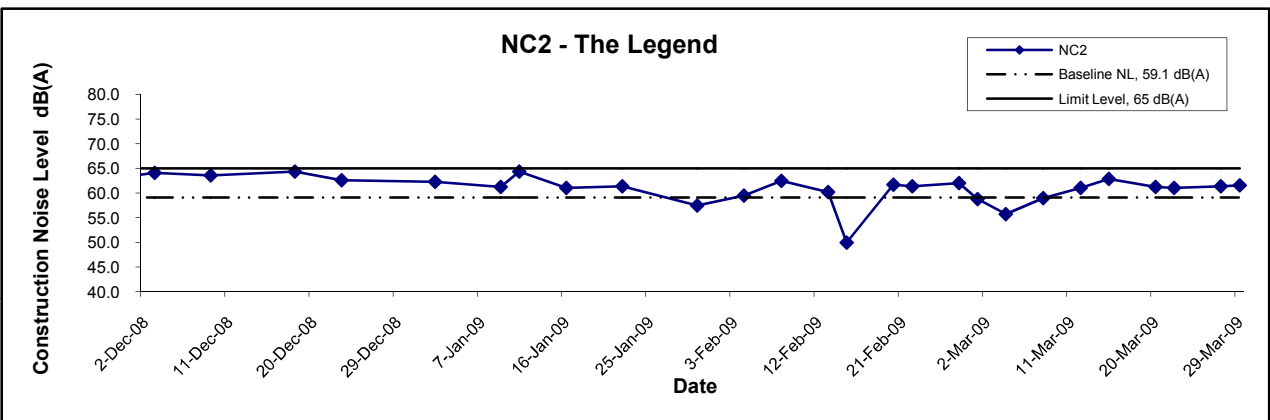
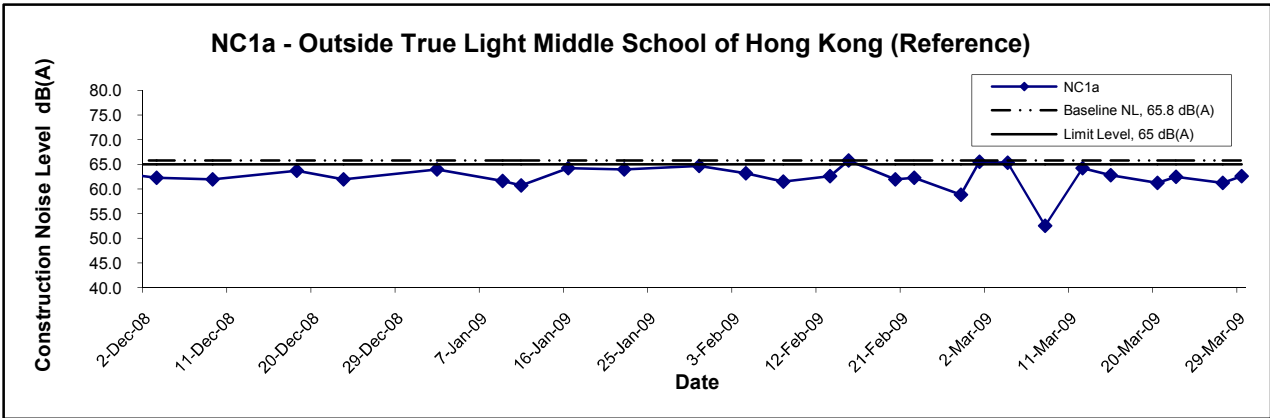
**APPENDIX E
GRAPHICAL PRESENTATION OF
NOISE MONITORING RESULTS**

Noise Levels



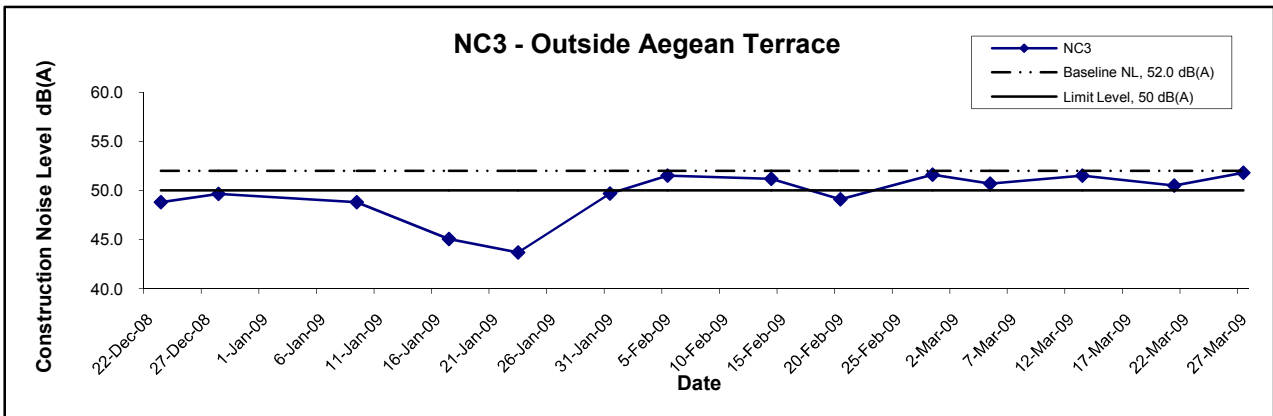
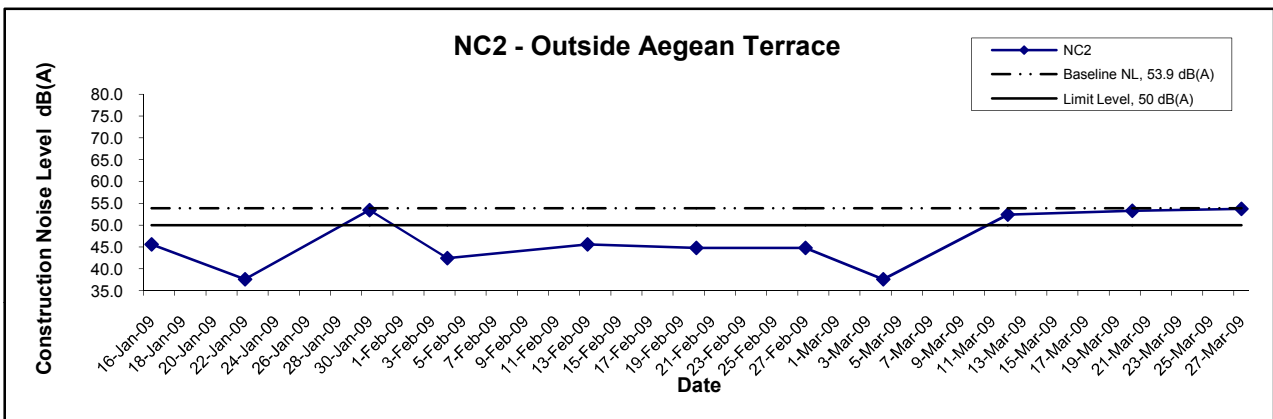
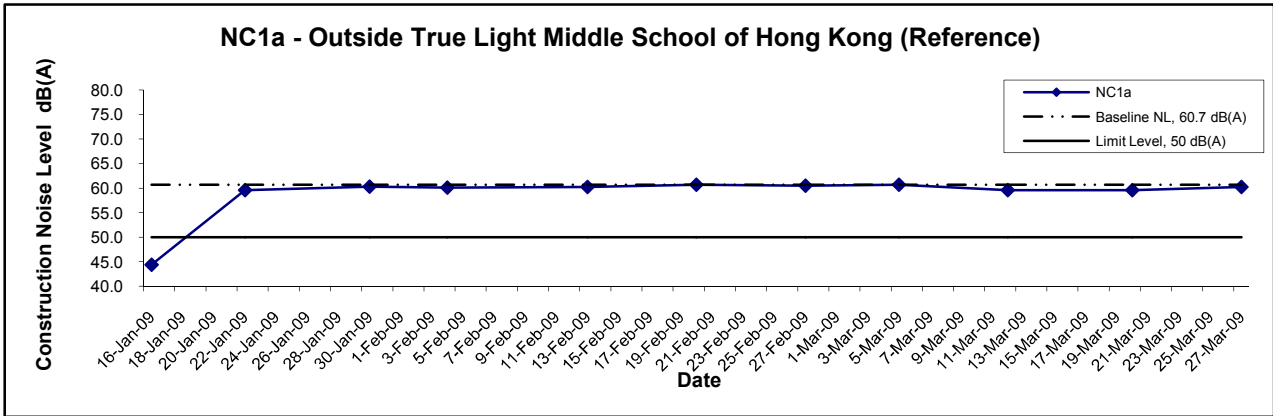
Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA8001	CINOTECH
	Date Mar 09	Appendix E	

Noise Levels
(Restricted Hours - 07:00 - 23:00 holidays & 19:00 - 23:00 on all other days)



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA8001	
	Date Mar 09	Appendix E	

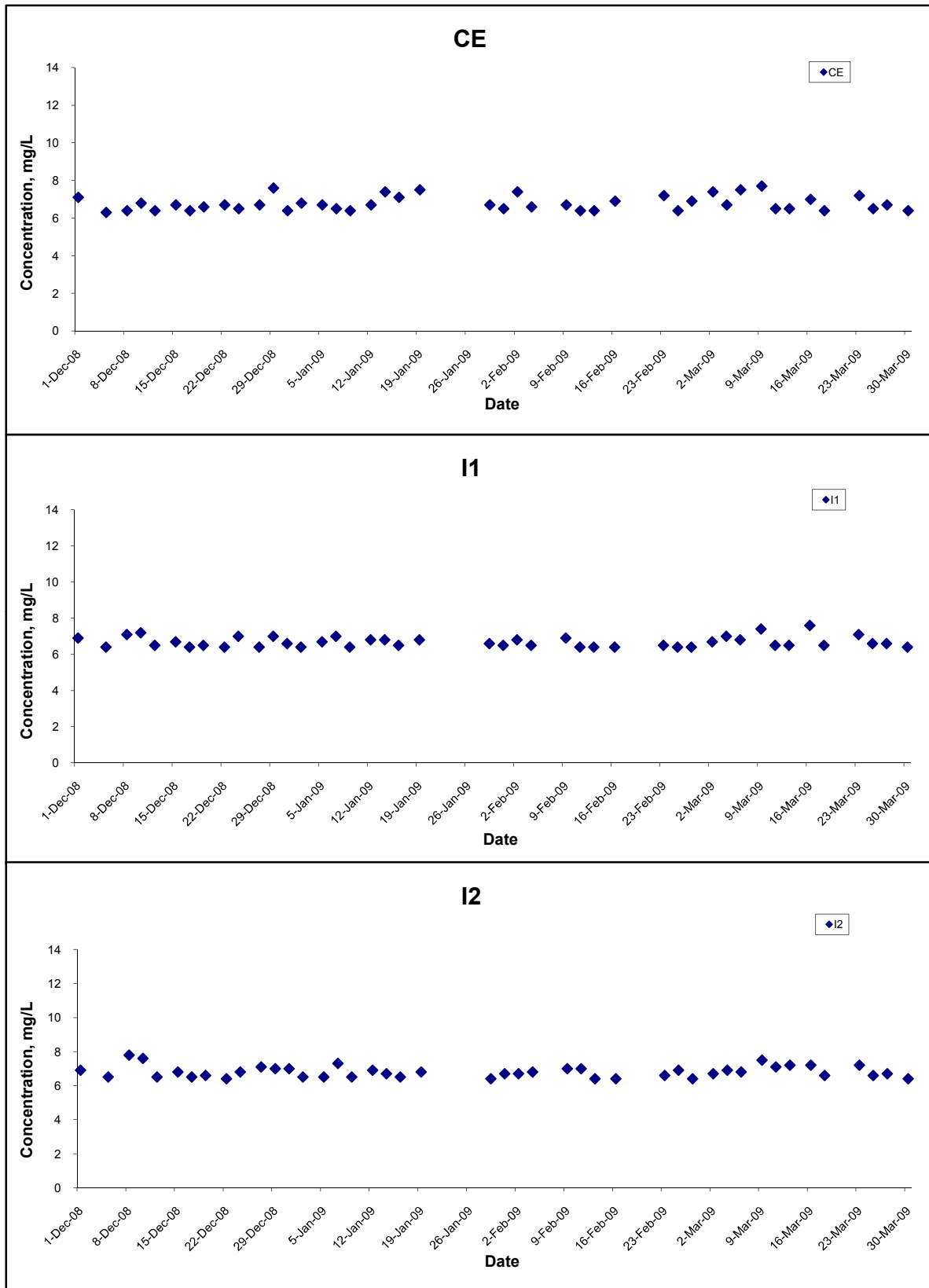
Noise Levels (Restricted Hours - 23:00 to 07:00 on all days)



Title Contract No. DC/2007/10 Design and Construction of Hong Kong West Drainage Tunnel Graphical Presentation of Construction Noise Monitoring Results	Scale	N.T.S	Project No.	MA8001	CINOTECH
	Date	Mar 09	Appendix	E	

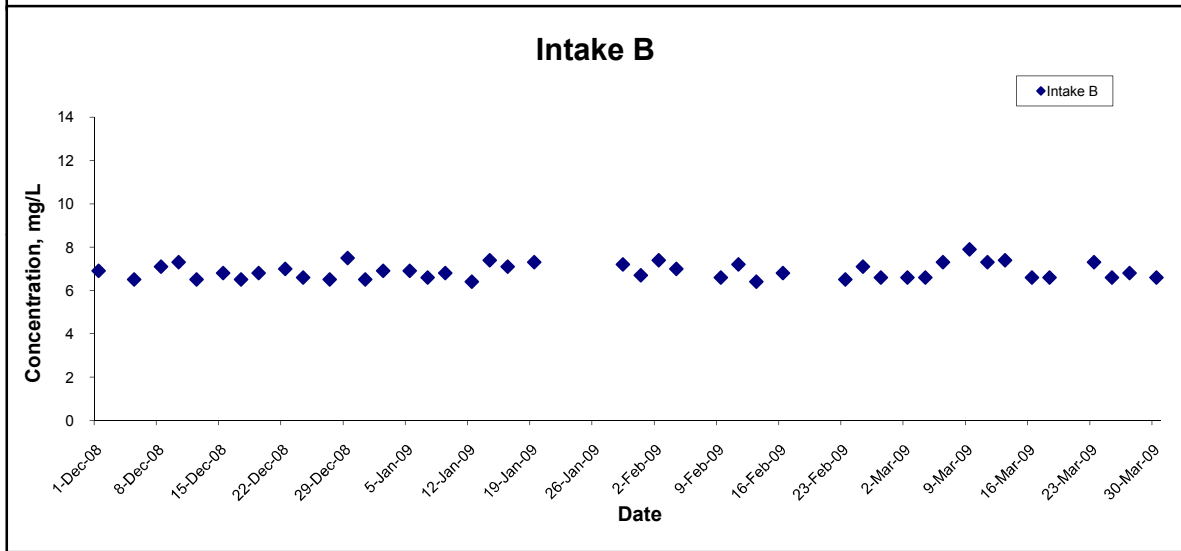
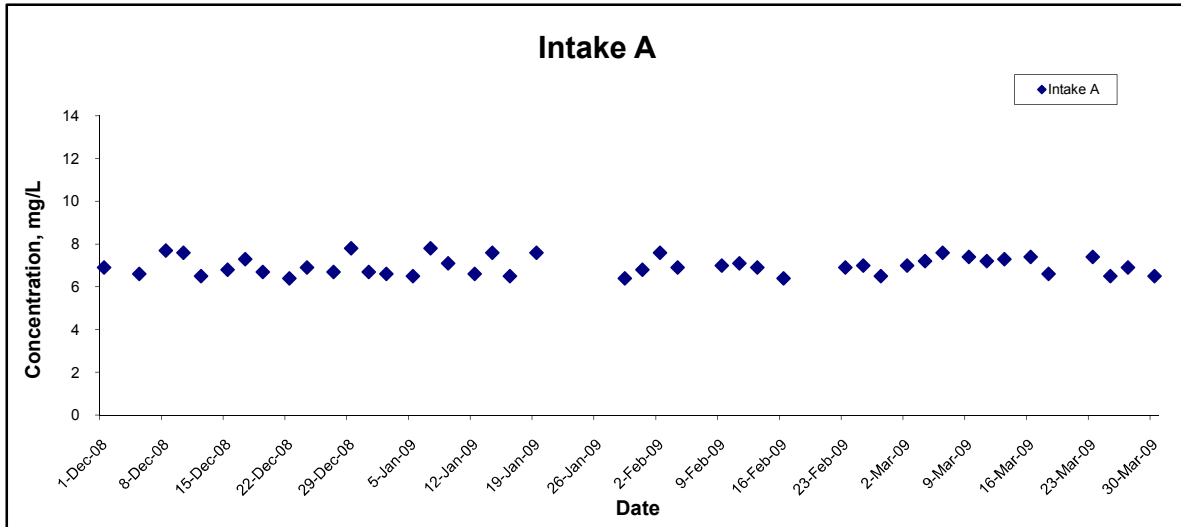
**APPENDIX F
GRAPHICAL PRESENTATION OF
WATER QUALITY MONITORING
RESULTS**

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



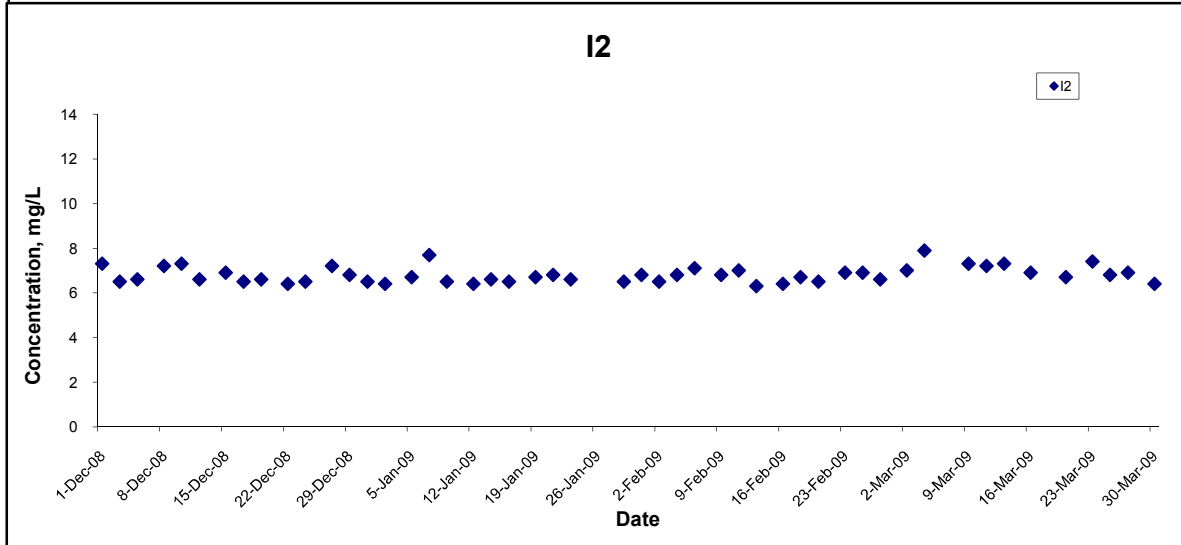
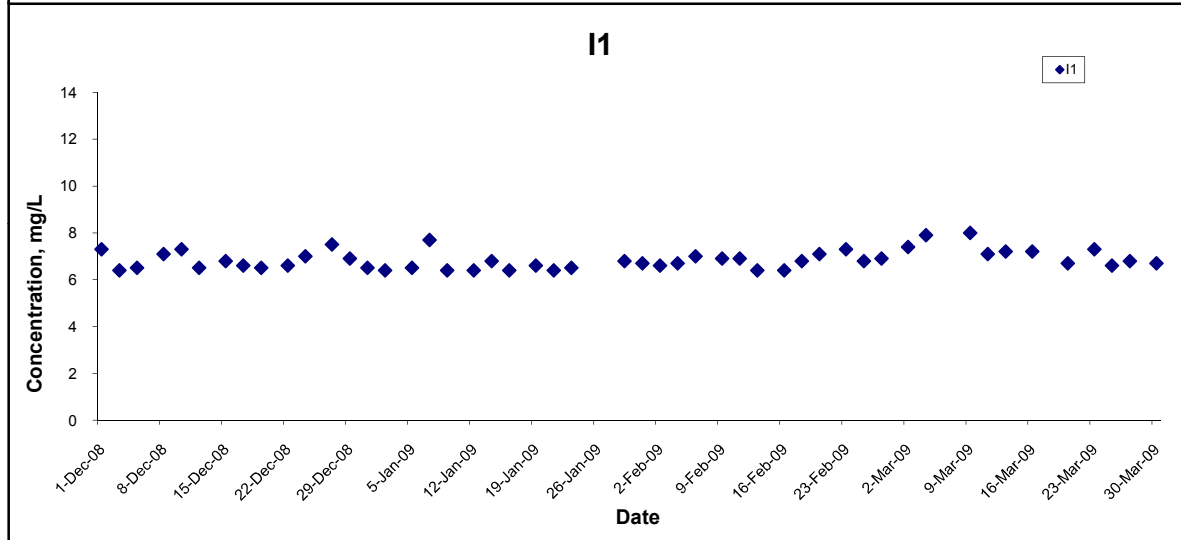
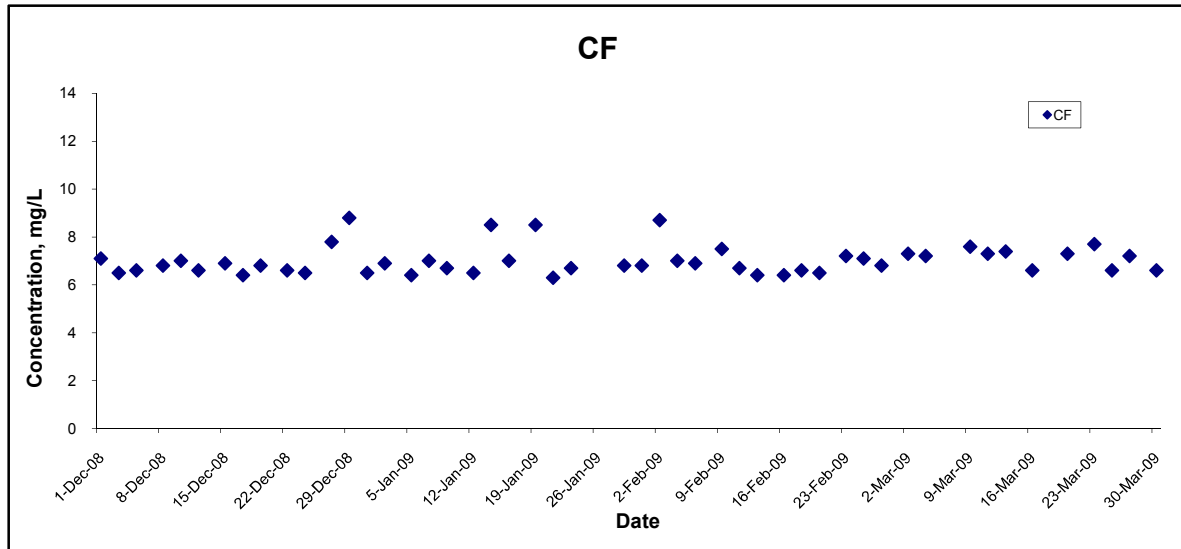
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	Date	Mar 09	Appendix F	

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



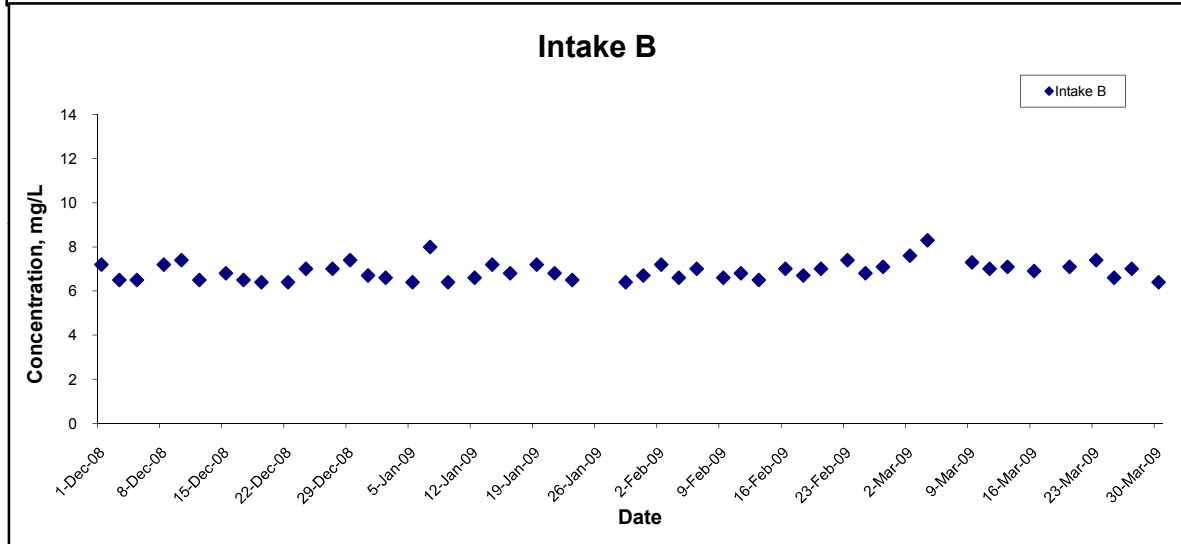
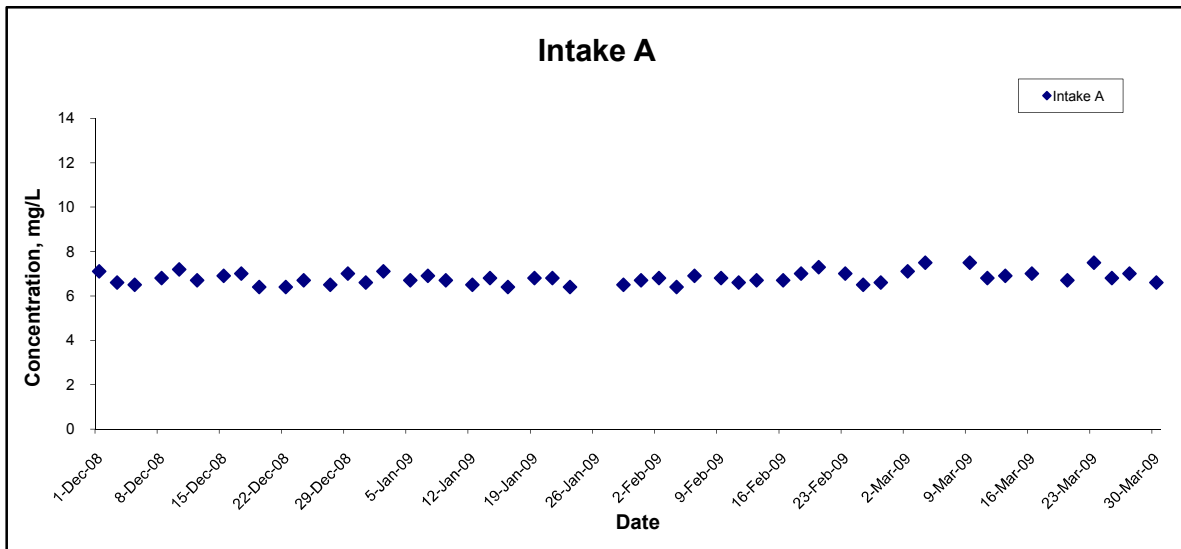
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	Date Mar 09	Appendix F	

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



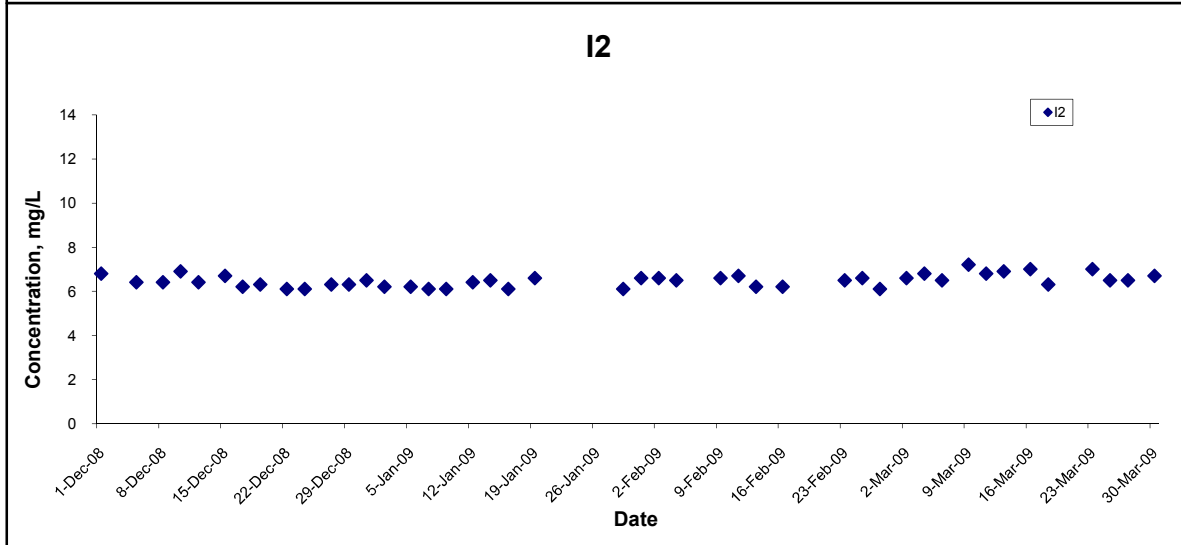
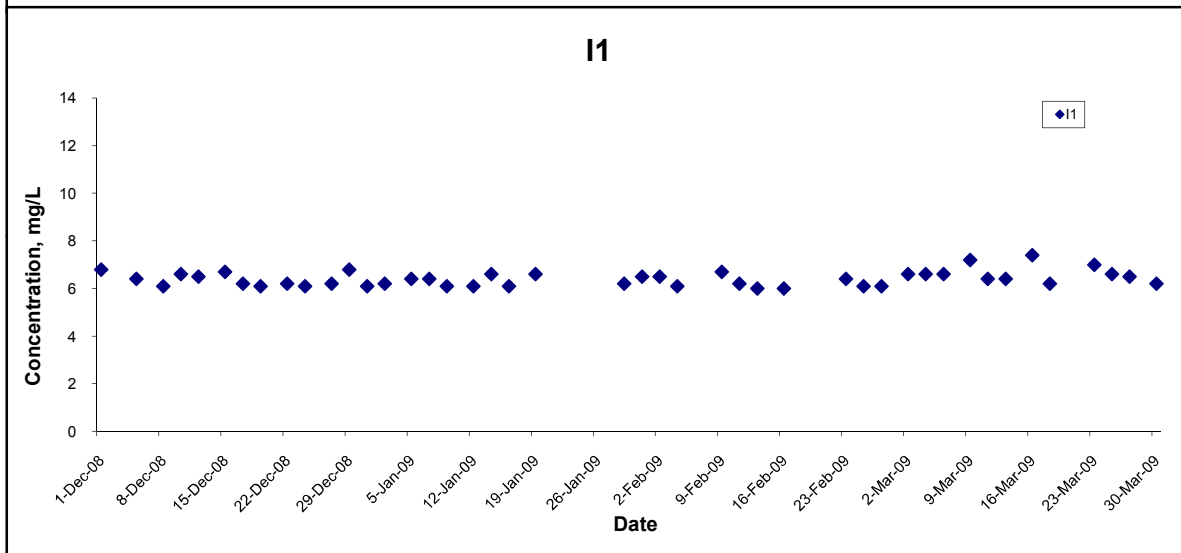
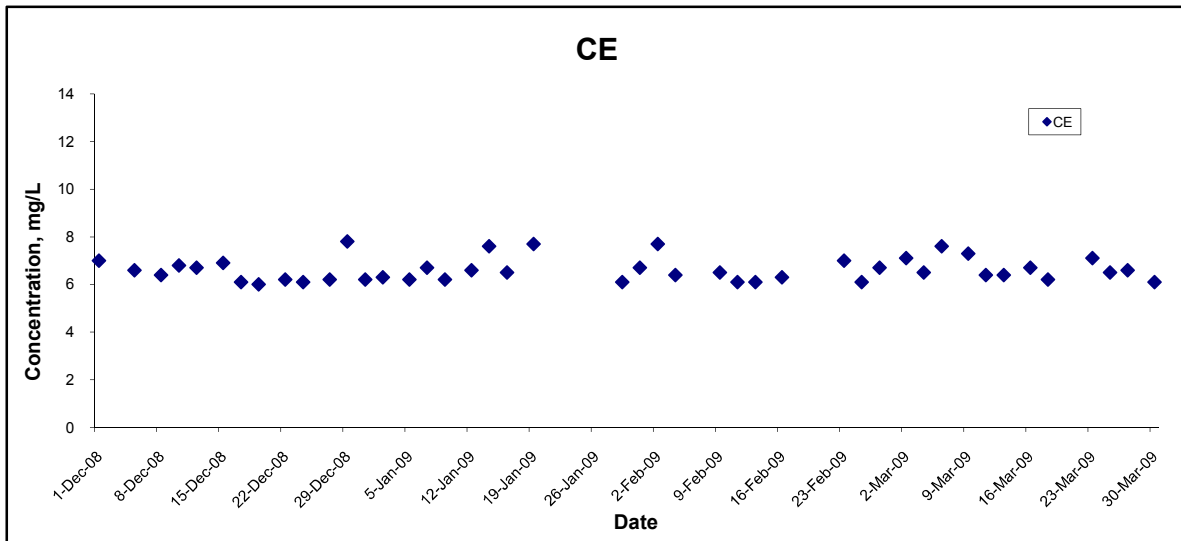
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	Date Mar 09	Appendix F	

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



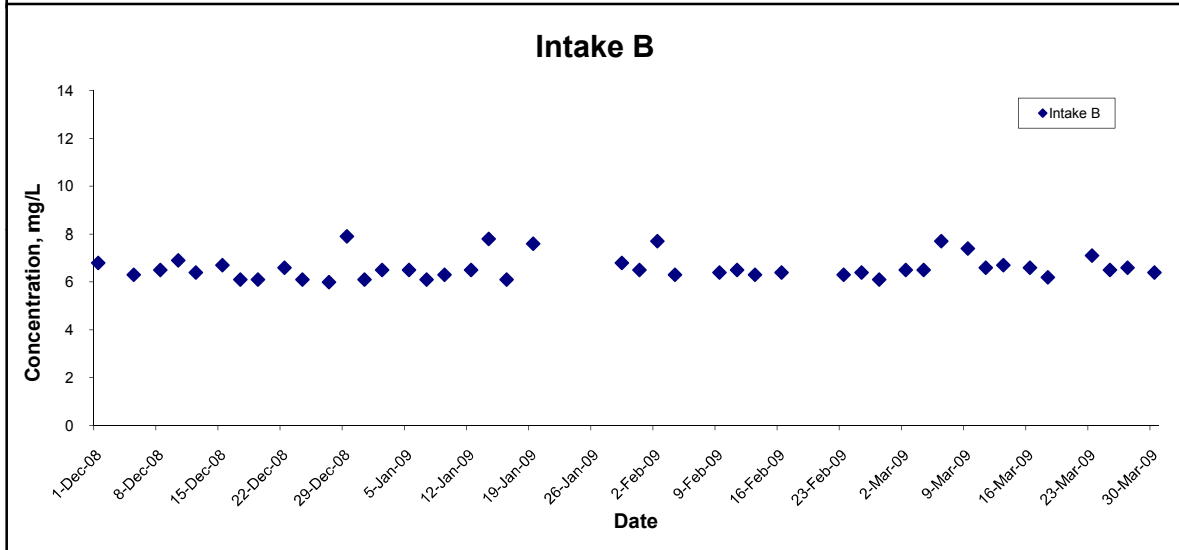
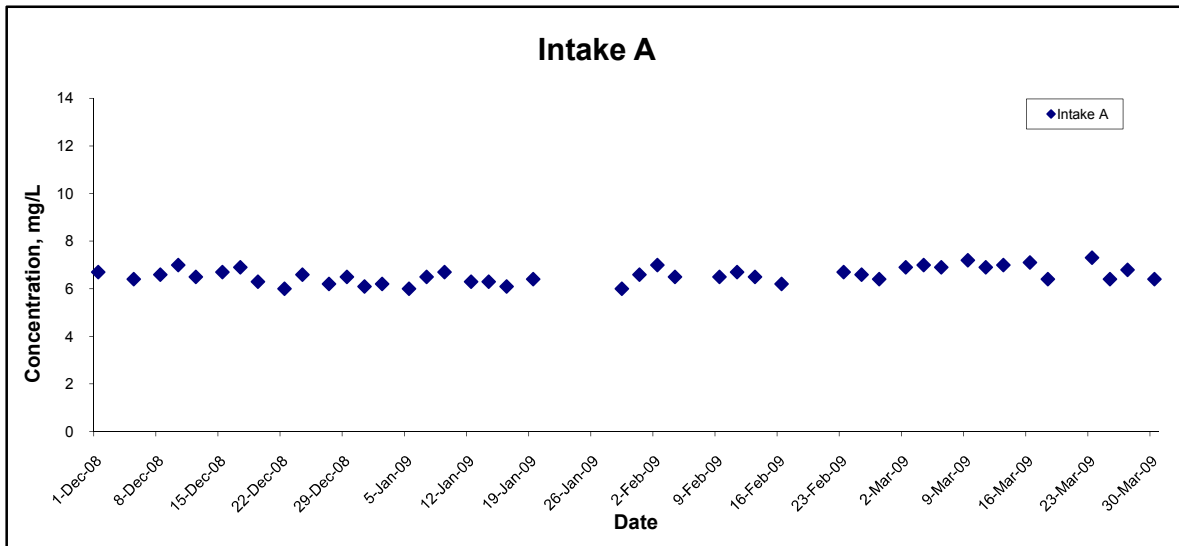
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	Date Mar 09	Appendix F	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



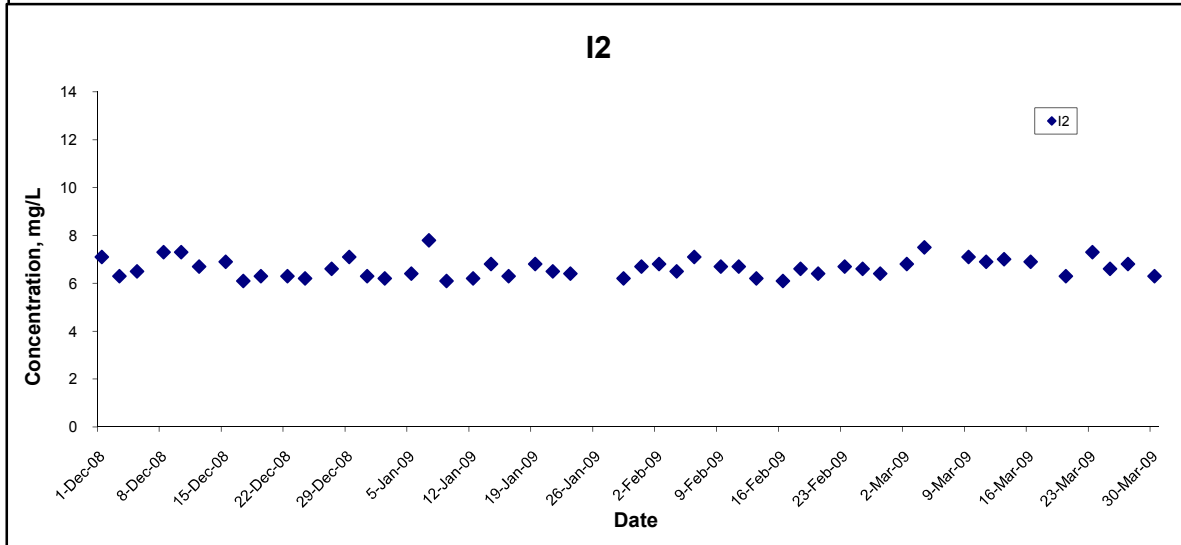
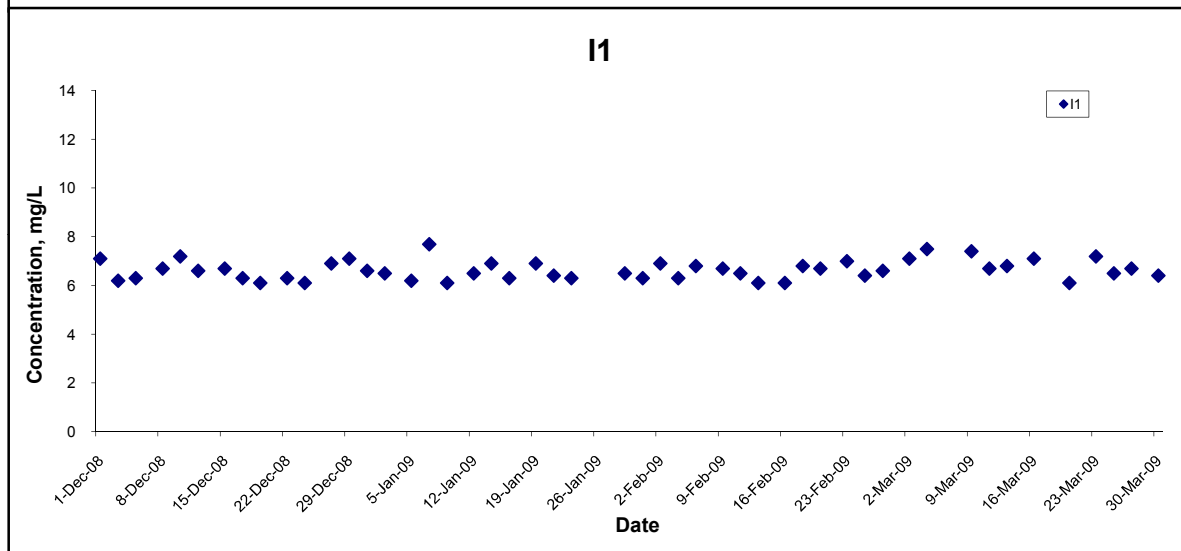
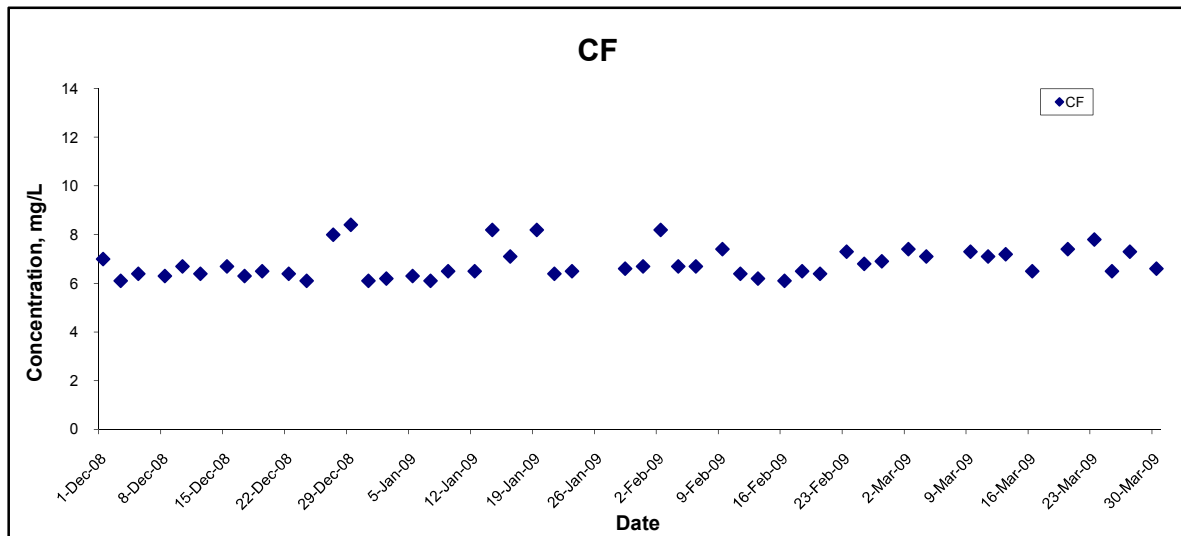
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	Date Mar 09	Appendix F	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



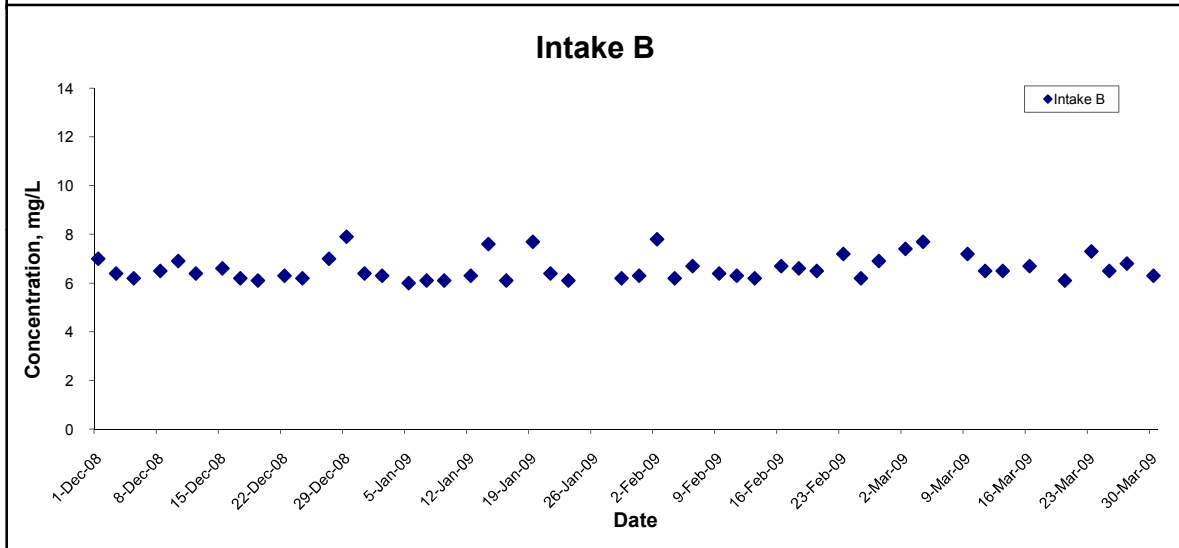
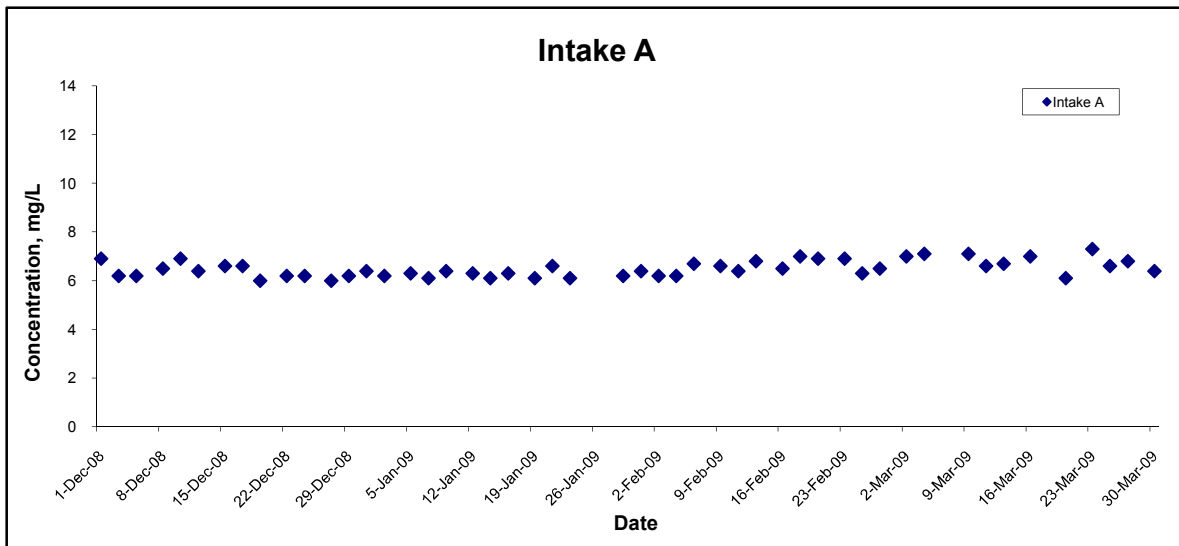
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	Date Mar 09	Appendix F	

Dissolved Oxygen (Bottom) at Mid-Flood Tide



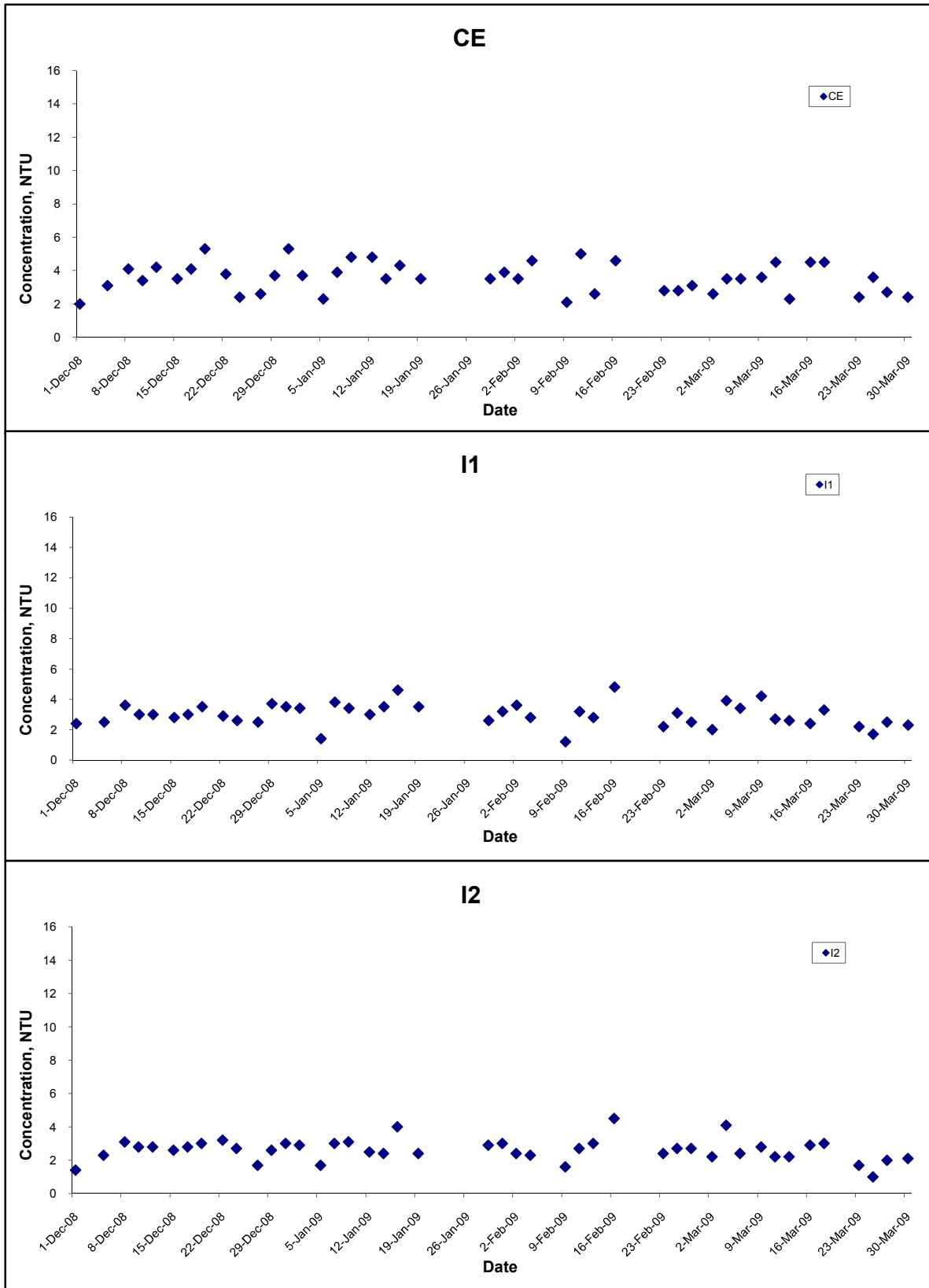
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	Date Mar 09	Appendix F	

Dissolved Oxygen (Bottom) at Mid-Flood Tide



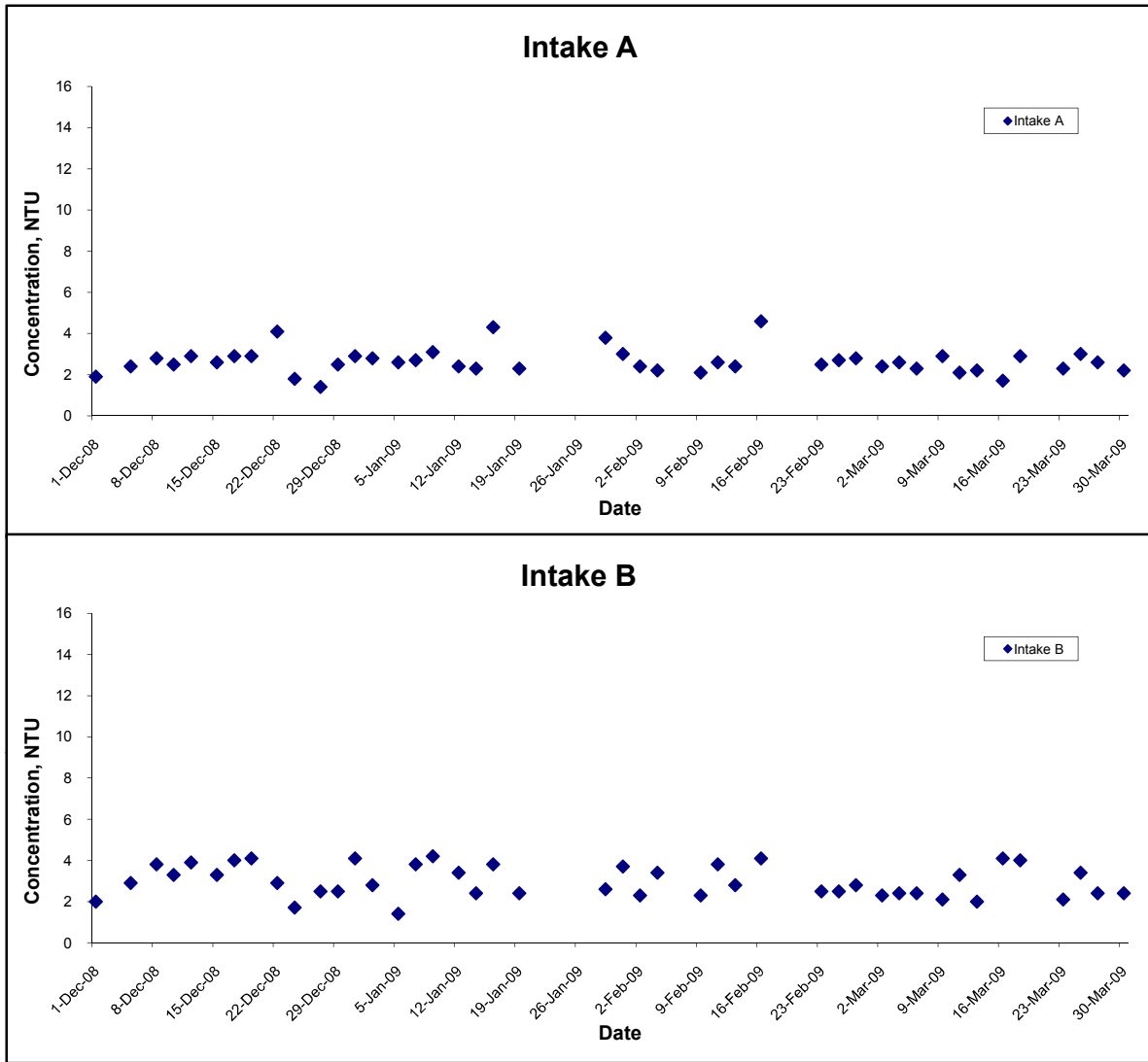
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	Date Mar 09	Appendix F	

Turbidity (Depth-averaged) at Mid-Ebb Tide



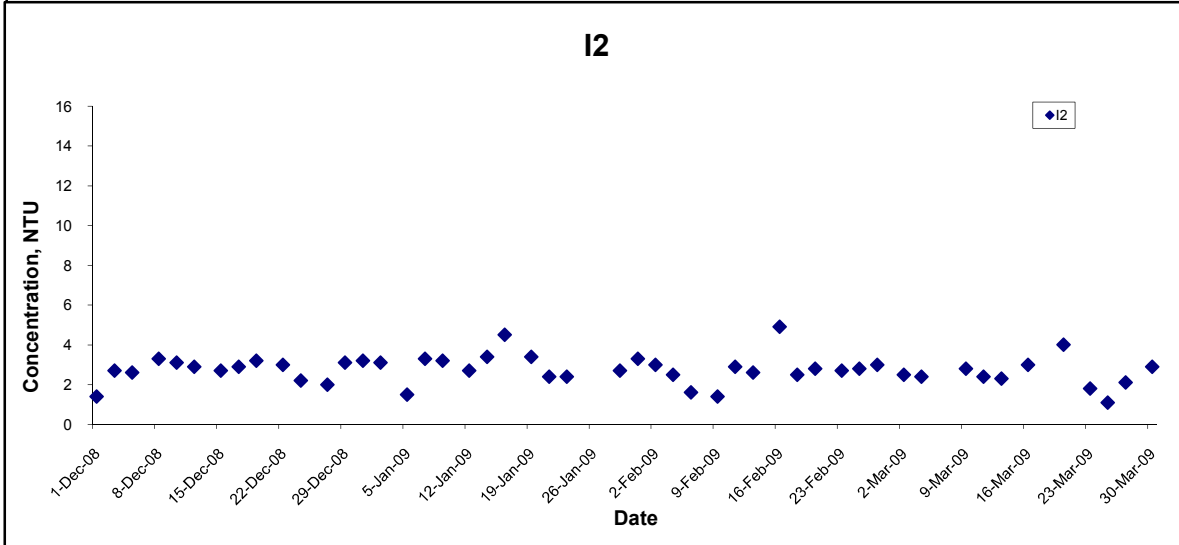
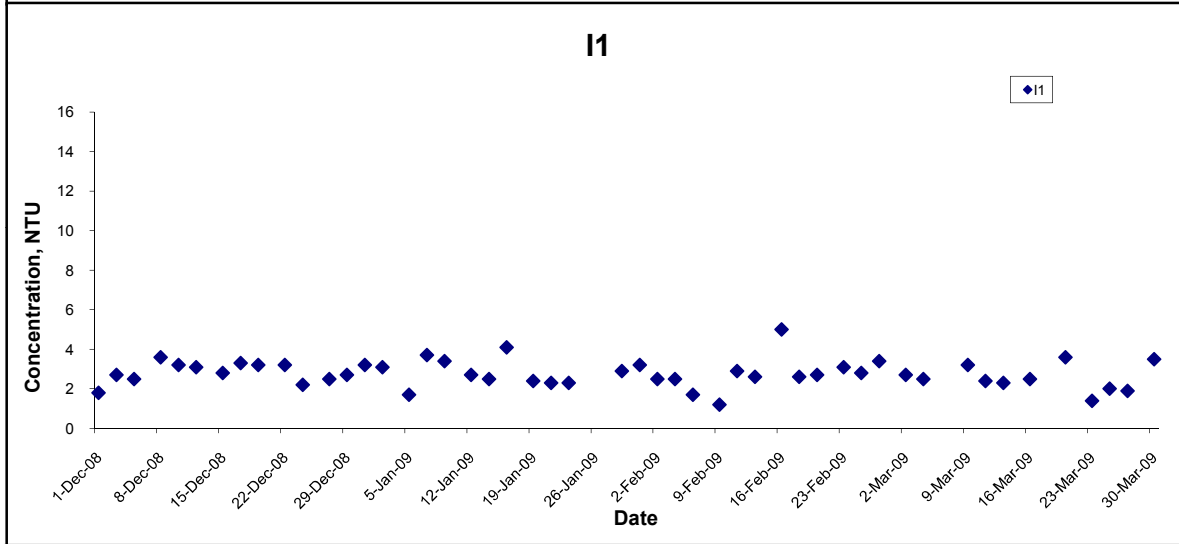
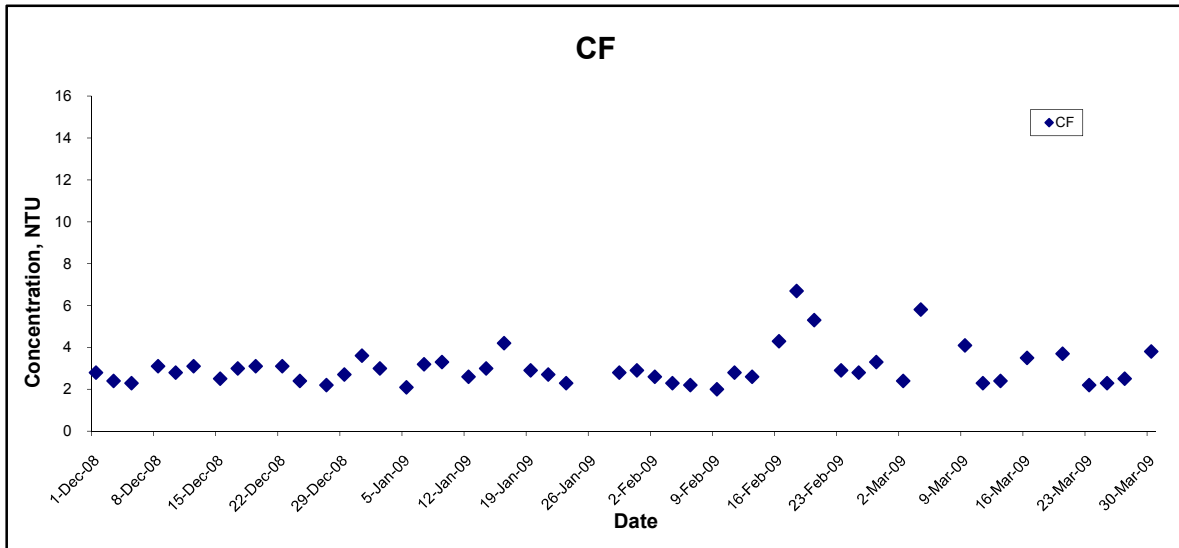
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	Date	Mar 09	Appendix F	

Turbidity (Depth-averaged) at Mid-Ebb Tide



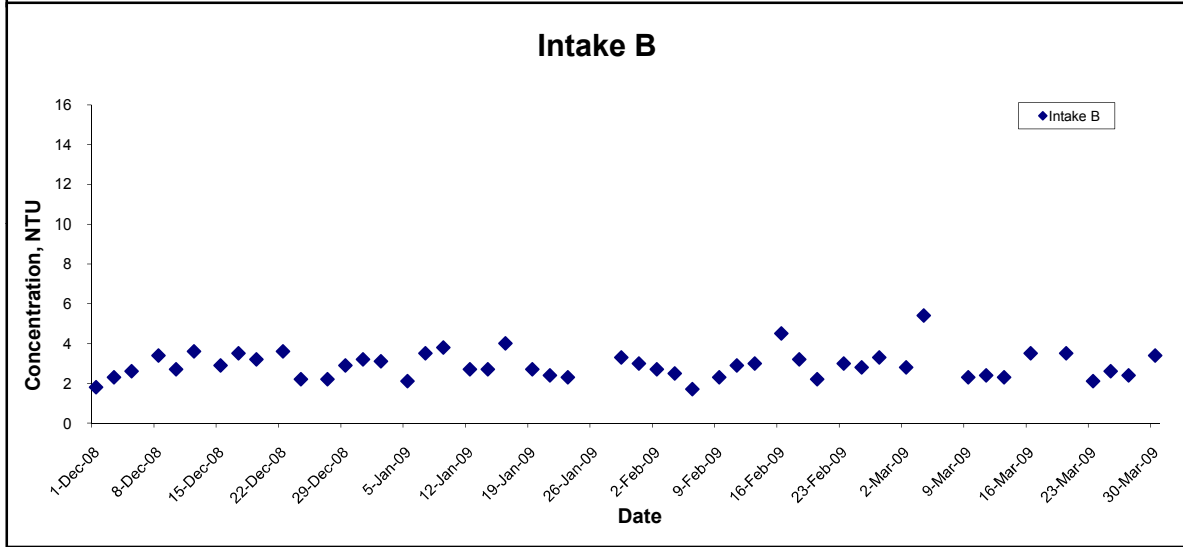
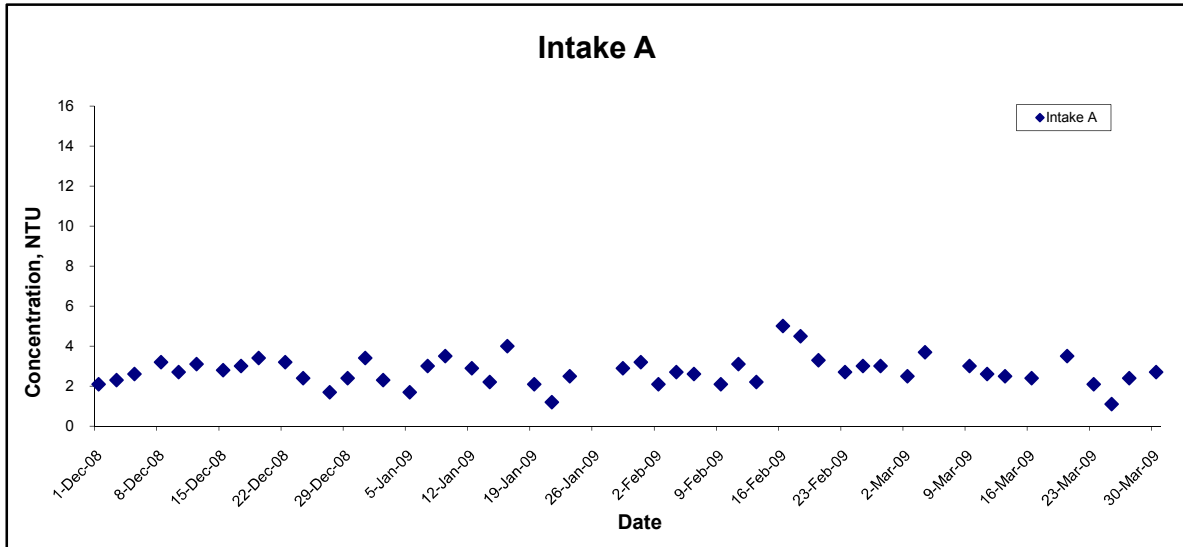
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	Date	Mar 09	Appendix F	

Turbidity (Depth-averaged) at Mid-Flood Tide



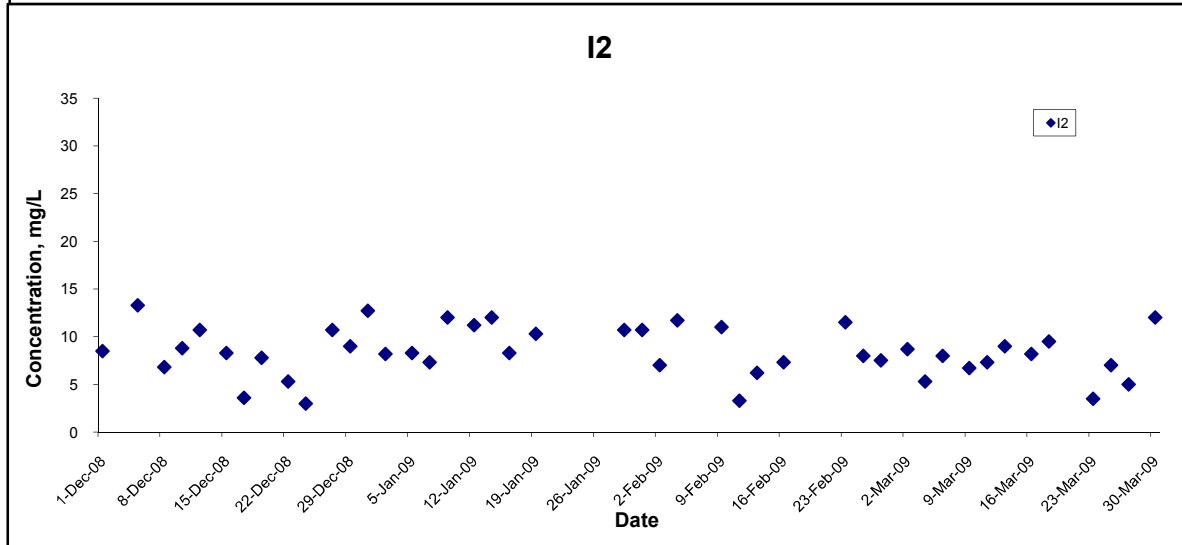
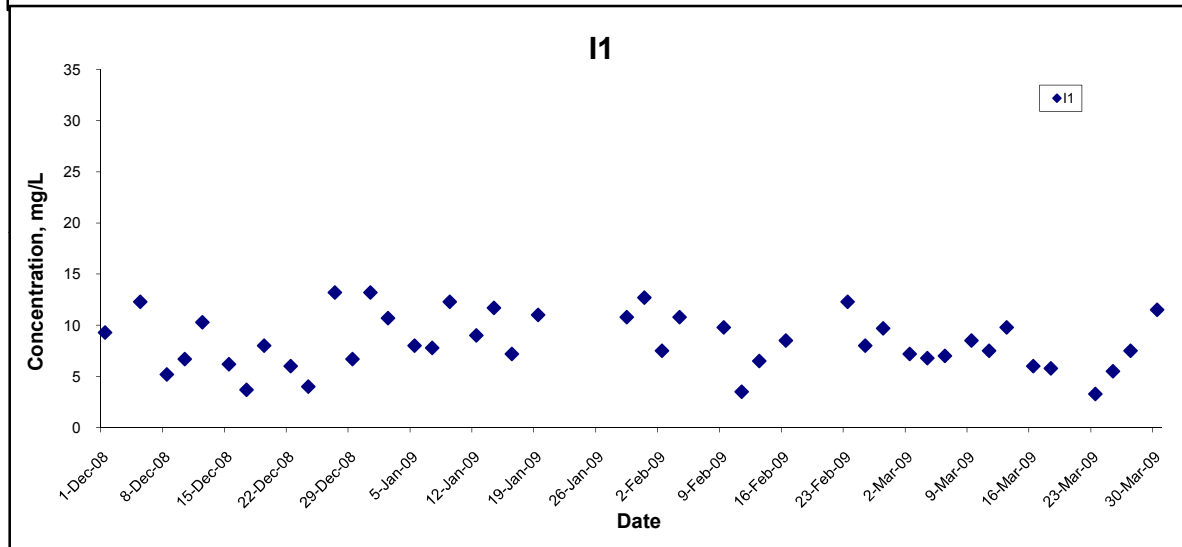
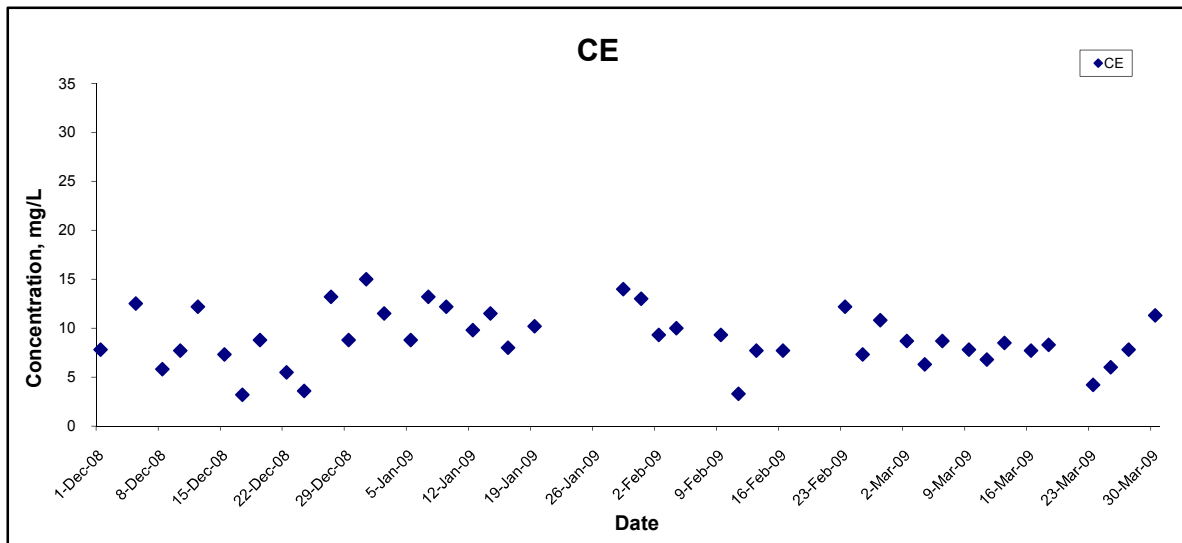
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	Date Mar 09	Appendix F	

Turbidity (Depth-averaged) at Mid-Flood Tide



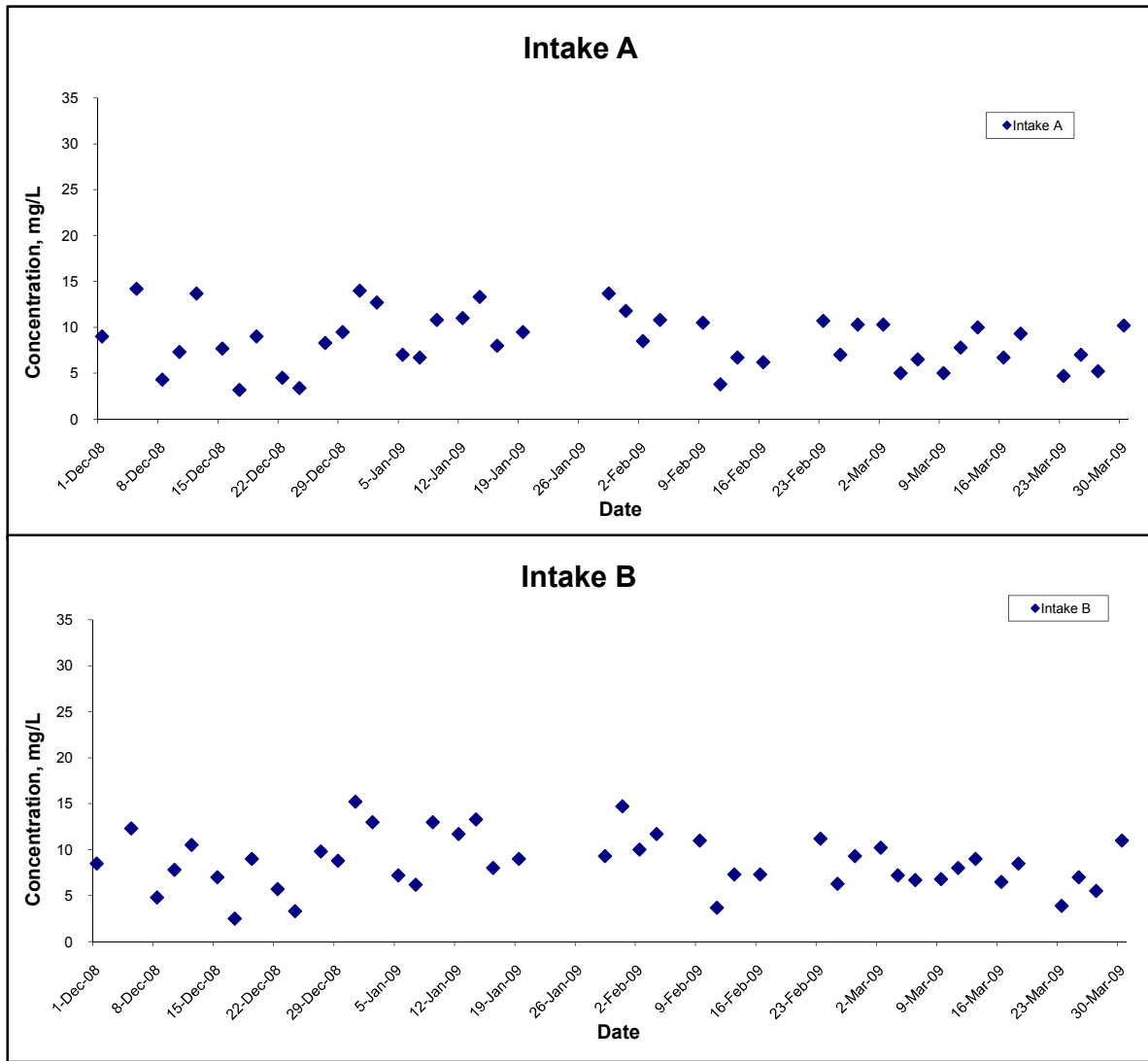
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	Date Mar 09	Appendix F	

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



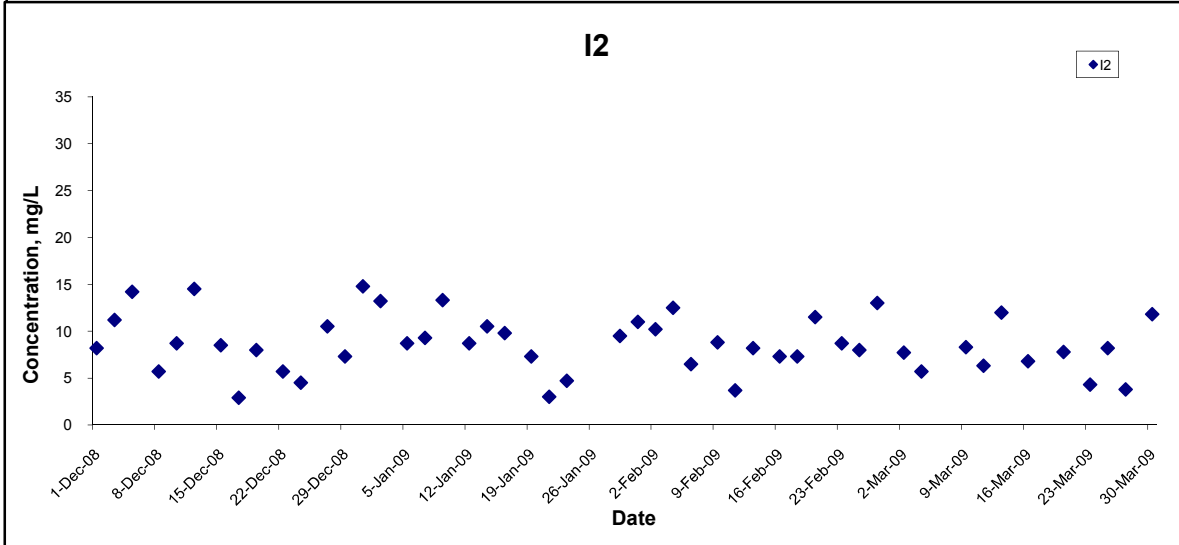
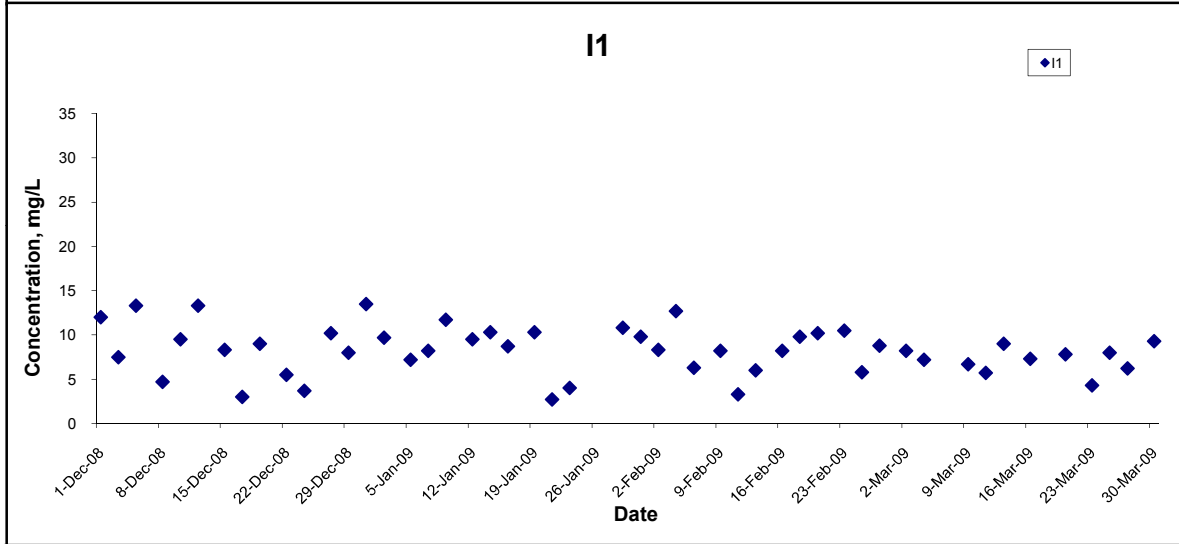
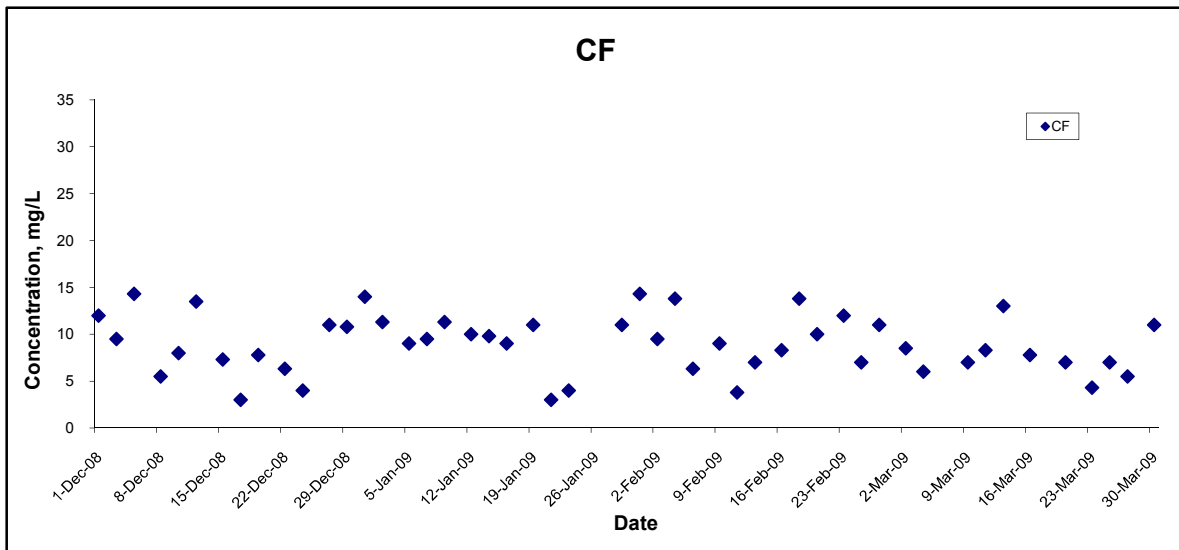
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	Date Mar 09	Appendix F	

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



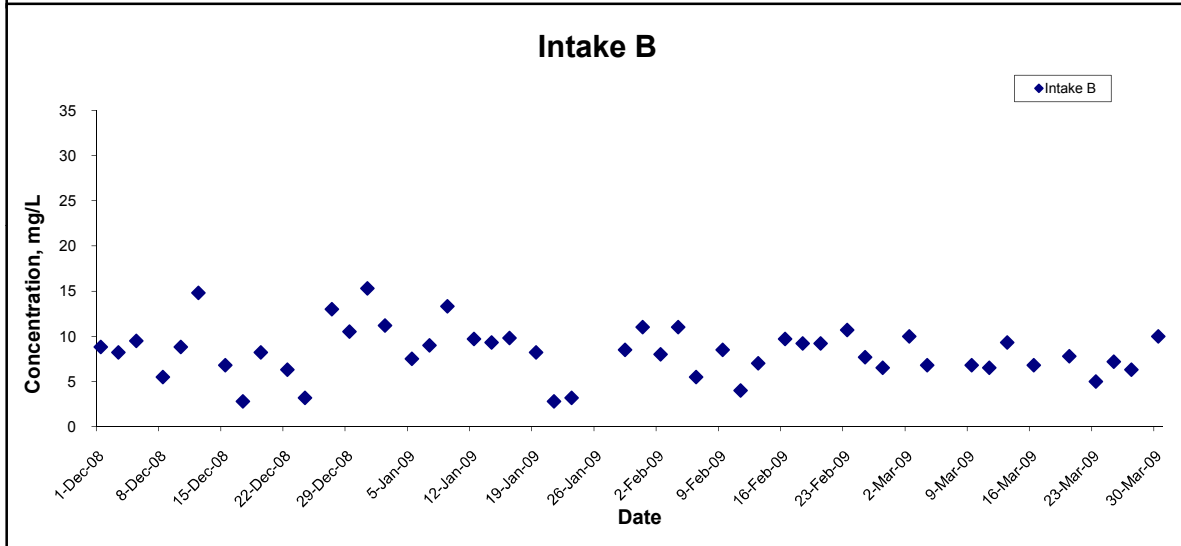
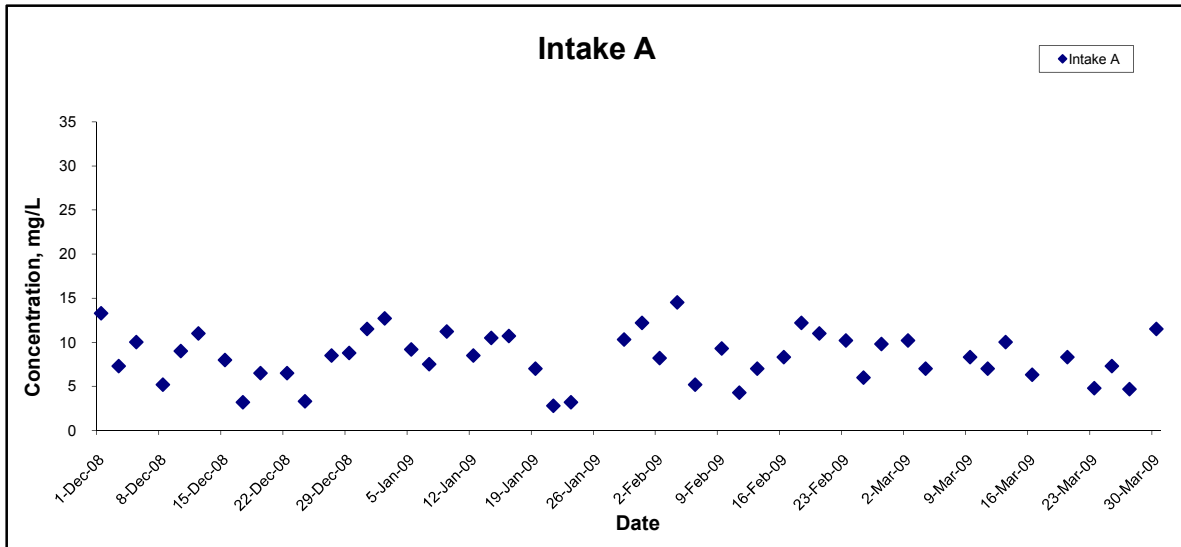
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	Date	Mar 09	Appendix F	

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	
	Date Mar 09	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	Mar 09	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	<i>Dust Mitigation Measures</i>	
	<ul style="list-style-type: none"> The Contractor shall undertake at all times to prevent dust nuisance as a result of his activities. Effective dust suppression measures should be installed to minimize air quality impacts, at the boundary of the site and at any sensitive receivers. 	*
	<ul style="list-style-type: none"> No blasting shall be carried out when the strong wind signal or tropical cyclone warning signal No. 3 or higher is hoisted (unless prior permission of the Commissioner of Mines is obtained). 	^
	<ul style="list-style-type: none"> Effective water sprays shall be used during the delivery and handling of all raw sand, aggregate and other similar materials, when dust is likely to be created, to dampen all stored materials during dry and windy weather. Watering of exposed surfaces shall be conducted as often as possible depending on the circumstances. 	*
	<ul style="list-style-type: none"> A watering programme of once every 2 hours in normal weather conditions, and hourly in dry/windy conditions. 	*
	<ul style="list-style-type: none"> Any stockpile of dusty material cannot be immediately transported out of the Site shall be either: a) covered entirely by impervious sheeting; b) placed in an area sheltered on the top and the three sides; or c) sprayed with water or a dust suppression chemical so as to maintain the entire surface wet. 	*
	<ul style="list-style-type: none"> Should a conveyor system be used, the Contractor shall implement the following precautionary measures. Conveyor belts shall be fitted within windboards. Conveyor transfer points and hopper discharge areas shall be enclosed to minimize dust emission. All conveyors under control of the Contractor, and carrying materials which have the potential to create dust, shall be totally enclosed and fitted with belt cleaners. 	N/A
	<ul style="list-style-type: none"> Any dusty materials being discharged to vehicle from a conveying system at fixed transfer point, three-sided roofed enclosed with a flexible curtain across the entry shall be provided. Exhaust fans shall be provided for this enclosure and vented via a suitable fabric filter system. 	N/A
	<ul style="list-style-type: none"> The heights from excavated spoils are dropped should be minimise to reduce the fugitive dust arising from unloading/loading. 	^
	<ul style="list-style-type: none"> The Contractor shall confine haulage and delivery vehicles to designated roadways inside the site. If in the opinion of the Engineer, any motorising vehicle is causing dust nuisance, the Engineer may require that the vehicle be restricted to a maximum speed of 15km per hour while within the site area. 	^
<ul style="list-style-type: none"> Areas within the site where there is a regular movement of vehicles shall have an approved hard surface, be kept clear of loose surface materials and / or be regularly watered. 	^	
<ul style="list-style-type: none"> Wheel cleaning facilities shall be installed for both portals and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads. Water in the wheel cleaning facility shall be changed at frequent intervals and sediments shall be removed regularly. The Contractor shall submit details of proposals for the wheel cleaning facilities to the Engineer prior to construction of the facility. Such wheel cleaning facilities shall be usable prior to any earthwork excavation activity on site. The Contractor shall provide a hard-surfaced road between any cleaning facility and the public road. 	^	
<ul style="list-style-type: none"> Chemical wetting agents shall only be used on completed cuts and fills to reduce wind erosion. 	N/A	

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

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<p>Construction Noise</p>	<p><u>Air borne noise</u></p> <p>In general, potential construction noise impact can be minimized or avoided by imposing a combination of the following mitigation measures:</p> <ul style="list-style-type: none"> • Noisy equipment and activities should be sited by the Contractor as far from close-proximity sensitive receivers as practical. Prolonged operation of noisy equipment close to dwellings should be avoided. • The Contractor should minimise construction noise exposure to the schools (especially during examination periods). The Contractor should liaise with the school and the Examination Authority to ascertain the exact dates and times of all examination periods during the course of the works contract and to avoid noisy activities during these periods. • Noisy plant or processes should be replaced by quieter alternatives. Silenced diesel and gasoline generators and power units, as well as silenced and super-silenced air compressor, can be readily obtained. • Noisy activities should be scheduled to minimise exposure of nearby sensitive receivers to high levels of construction noise. For example, noisy activities can be scheduled for midday, or at times coinciding with periods of high background noise (such as during peak traffic hours). • Idle equipment should be turned off or throttled down. Noisy equipment should be properly maintained and used no more often than is necessary. • The power units of non-electric stationary plant and earth-moving plant should be quietened by vibration isolation and partial or full acoustic enclosures for individual noise-generating components. • Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided, thus reducing the cumulative impacts between operations. The numbers of operating items of powered mechanical equipment should be minimised. Noise can be reduced by increasing the distance between the operating equipment and the NSRs or by reducing the number of items of equipment and/or construction activity in the area at any one time. • The use of quiet plant working methods can further reduce noise level. Quiet plant is defined as Powered Mechanical Equipment (PME) whose actual sound power level is less than the value specified in the TMs for the same piece of equipment. To allow the Contractor some flexibility to select equipment to suit his needs, it is considered too restrictive to specify which specific items of silenced equipment to be used for the construction operations. It should be noted that various types of silenced equipment can be found in Hong Kong and are readily available on the market. BS 5228 also provides examples of quiet construction plant and their SWL. • Construction plant should be properly maintained (well-greased, damage and worn parts promptly replaced) and operated. Construction equipment often has silencing measures built in or added on, e.g. bulldozer silencers, compressor panels, and mufflers. Silencing measures should be properly maintained and utilised. Rubber or damping materials should be introduced between metal panels to avoid rattle and reverberation of noise. • Equipment known to emit sound strongly in one direction should be oriented so that the noise is directed away from nearby NSRs. • Materials stockpile and other structures (such as site offices) should be effectively utilised to shield construction noise. Noise 	<p>^</p> <p>^</p> <p>N/A</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>

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

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

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Water Quality	<p><u>Precautionary measures for construction work near natural streams</u></p> <p>The government provides guidelines (ETWB TCW NO. 5/2005 and DSD TC 2/2004) are providing guidelines to minimize impacts when there is construction work carried out at near natural streams course. Relevant mitigation measures for the intakes are summarised as follows:</p> <ul style="list-style-type: none"> • Temporary site access to the work sites should be carefully planned and located to minimize disturbance caused to the substrates of streams/ivers 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. 	<p>*</p> <p>*</p> <p>*</p> <p>*</p> <p>*</p>
	<p><u>Construction of temporary berthing point at the Western Portal</u></p> <p>A refuse collection vessel shall be provided to collect refuse or materials lost into the sea.</p>	<p>^</p>
	<p>The respective areas of the marine works will be completely enclosed by the silt curtain. The curtain shall be extended from water surface down to the seabed where it is anchored using sinker blocks. The Contractor shall inspect the silt curtain on regular basis to ensure its integrity and it is serviceable for all times.</p>	<p>*</p>

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

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

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

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

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

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	<ul style="list-style-type: none"> • 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 <p><u>Chemical wastes</u></p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p><u>General refuse</u></p> <p>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).</p> <p>Office waste can be reduced through recycling of paper if volumes are large enough to warrant collection.</p> <p>Good management practices should be implemented to ensure that refuse is properly stored and is transported for disposal of at licensed landfills.</p>	<p>^</p> <p>^</p> <p>*</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>*</p> <p>*</p> <p>^</p> <p>^</p> <p>*</p>

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

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

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

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

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

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

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

APPENDIX 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 January 2009

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	07/01/2009	Standing water with oil was observed at the drip tray at Western Portal. The Contractor was reminded to clear them properly.	The item was not rectified during the follow-up audit session.
	07/01/2009	Silty water was observed discharging at the existing stream at Eastern Portal. The Contractor rectified the item immediately. However, The Contractor was reminded that all wastewater should be treated before discharging out and the wastewater treatment unit should be checked regularly to ensure these facilities can function properly at all time.	Rectification/improvement was observed during the follow-up audit session.
	07/01/2009	Muddy water and sediment was observed accumulate at the paved area at Eastern Portal. The Contractor was reminded to provide sand bag bund to surround the open channels to direct the silty runoff for treatment before discharging out.	The item was not rectified during the follow-up audit session.
	14/01/2009	Standing water at the pit area was observed at Eastern Portal. The Contractor was reminded to pump it out and treated before discharging.	Rectification/improvement was observed during the follow-up audit session.
	14/01/2009	Milky water was observed at the U-Channel at Eastern Portal. The Contractor was reminded to provide mitigation measures to prevent any wastewater from discharging out.	Rectification/improvement was observed during the follow-up audit session.
	14/01/2009	Standing water was observed at the drip tray at Western Portal. The Contractor was reminded to dry it out.	Rectification/improvement was observed during the follow-up audit session.
	14/01/2009	General refuse with standing water was observed at nullah at Western Portal. The Contractor was reminded to clear the waste and spray with larvicide to prevent mosquito breed.	Rectification/improvement was observed during the follow-up audit session.
	22/01/2009	Mud and sediment were observed accumulate near the U-Channel at Eastern Portal. The Contractor was reminded to clear them and erect sand bag bund for protecting the open channel to prevent any silt from getting to the channel and discharging out.	Rectification/improvement was observed during the follow-up audit session.
	<i>Air Quality</i>	07/01/2009	Opened cement bags were observed at Western Portal. The Contractor was reminded to cover it with tarpaulin to control dust emission.
14/01/2009		Cement bags (>20 bags) were observed without cover at Western Portal. The Contractor was reminded to cover them with tarpaulin to prevent dust emission.	Rectification/improvement was observed during the follow-up audit session.
14/01/2009		Dry unpaved area was observed at Western Portal. The Contractor was reminded to provide water-spray to prevent dust generation.	Rectification/improvement was observed during the follow-up audit session.

Parameters	Date	Observations and Recommendations	Follow-up
	22/01/2009	Cement bags (>20 bags) were observed without cover at Eastern Portal. The Contractor was reminded to cover them with tarpaulin to prevent dust emission. Cement bags were then covered with tarpaulin immediately.	Rectification/improvement was observed during the follow-up audit session.
	29/01/2009	Dry unpaved area was observed at Western Portal. The Contractor was reminded to provide water spray regularly to prevent dust emission.	Rectification/improvement was observed during the follow-up audit session.
Waste / Chemical Management	07/01/2009	Oil drums were observed standing on the bare ground at Western Portal. The Contractor was reminded to provide drip tray or store it properly.	Rectification/improvement was observed during the follow-up audit session.
	07/01/2009	Standing water with oil was observed at the drip tray at Western Portal. The Contractor was reminded to clear them properly.	Rectification/improvement was observed during the follow-up audit session.
	14/01/2009	Oil leakage was observed at underneath of plant equipment at Eastern Portal. The Contractor was reminded to clear the oil stains and well-maintained the plants to prevent further oil leakage.	Rectification/improvement was observed during the follow-up audit session.
	14/01/2009	General refuse with standing water was observed at nullah at Western Portal. The Contractor was reminded to clear the waste and spray with larvicide to prevent mosquito breed.	Rectification/improvement was observed during the follow-up audit session.
	14/01/2009	Chemical oil drum was observed without chemical label at Western Portal. The Contractor was reminded to provide appropriate label and attach at the oil drum.	Rectification/improvement was observed during the follow-up audit session.
	22/01/2009	Generator was observed to be placed outside the site and without drip tray at Intake W0. The Contractor was reminded to provide it with drip tray to prevent oil leakage. Generator was then placed within the site immediately.	Rectification/improvement was observed during the follow-up audit session.
	22/01/2009	C&D waste were observed accumulate in the material skip at Eastern Portal. The Contractor was reminded to clear the waste regularly.	Rectification/improvement was observed during the follow-up audit session.
	22/01/2009	Chemical oil drums were observed without chemical label and not stored properly at Eastern Portal. The Contractor was reminded to attach it with appropriate labels and stored properly.	Rectification/improvement was observed during the follow-up audit session.
	22/01/2009	C&D waste was observed not stored properly at Intake W0. The Contractor was reminded to provide material skip for temporary storage of C&D waste before disposing them.	The item was not rectified during the follow-up audit session.
	29/01/2009	Empty chemical containers were observed accumulate at Western Portal. The Contractor was reminded to clear them regularly.	Rectification/improvement was observed during the follow-up audit session.
29/01/2009	Material skip was still observed not provided at Intake W0. The Contractor was reminded to provide it as soon as possible.	Rectification/improvement was observed during the follow-up audit session.	

Parameters	Date	Observations and Recommendations	Follow-up
<i>Ecology</i>	07/01/2009	Silty water was observed discharging at the existing stream at Eastern Portal. The Contractor rectified the item immediately. However, The Contractor was reminded that all wastewater should be treated before discharging out and the wastewater treatment unit should be checked regularly to ensure these facilities can function properly at all time.	Rectification/improvement was observed during the follow-up audit session.
<i>Marine Ecology</i>	22/01/2009	Silty water was observed within the silt curtain at Western Portal. The Contractor was reminded to provide mitigation measures and well-maintained the silt curtain to prevent any silty water from getting out.	The item was not rectified during the follow-up audit session.
<i>Reminders</i>	07/01/2009	The Contractor was reminded of the followings: - Construction works at near the existing stream at Eastern Portal should be carried out carefully to prevent any disturbance / damage to the stream.	*Follow-up action was needed for the item.
	07/01/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern, Western Portals and Intake sites.	*Follow-up action was needed for the item.
	14/01/2009	The Contractor was reminded of the followings: - Construction works at near the existing stream at Eastern Portal should be carried out carefully to prevent any disturbance / damage to the stream.	*Follow-up action was needed for the item.
	14/01/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern, Western Portals and Intake sites.	*Follow-up action was needed for the item.
	22/01/2009	The Contractor was reminded of the followings: - Construction works at near the existing stream at Eastern Portal should be carried out carefully to prevent any disturbance / damage to the stream and causing silty water discharging out.	Rectification/improvement was observed during the follow-up audit session.
	22/01/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern, Western Portals especially the Intake sites.	*Follow-up action was needed for the item.
	29/01/2009	The Contractor was reminded of the followings: - Silt curtain should be fully enclosed the work area to prevent any silty water from discharging out.	Rectification/improvement was observed during the follow-up audit session.
	29/01/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern,	*Follow-up action was needed for the item.

Parameters	Date	Observations and Recommendations	Follow-up
		Western Portals especially the Intake sites.	

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 February 2009

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	04/02/2009	Silty water was observed discharging out to the public road and U-Channel at Eastern Portal. The Contractor was reminded to seal the hoarding and provide mitigation measures to prevent any wastewater from discharging out.	The item was not rectified during the follow-up audit session.
	04/02/2009	Sediment was observed accumulate at the culvert at Eastern Portal. The Contractor was reminded to clear them frequently.	Rectification/improvement was observed during the follow-up audit session.
	04/02/2009	Debris and stones were observed accumulate at the U-Channel near the Wetsep at Western Portal. The Contractor was reminded to clear them.	Rectification/improvement was observed during the follow-up audit session.
	11/02/2009	Silty water was observed discharging out to the public road at Eastern Portal. The Contractor was reminded to seal the hoarding to prevent any wastewater from discharging out.	Rectification/improvement was observed during the follow-up audit session.
	18/02/2009	Standing water was observed at the drip tray at Intake PFLR1. The Contractor was reminded to dry it out.	The site was not observed during the site inspection.
	18/02/2009	Drainage channel was observed without cover at near the works at Intake PFLR1. The Contractor was reminded was reminded to cover it properly.	The site was not observed during the site inspection.
	18/02/2009	Standing water was observed at the pit area of the concrete blocks. The Contractor was reminded to pave them properly.	The item was not rectified during the follow-up audit session.
	27/02/2009	Standing water was observed at the pit area of the concrete blocks at Eastern Portal. The Contractor was reminded to pave them properly.	Rectification/improvement was observed during the follow-up audit session.
	27/02/2009	Sediment was observed accumulated at the boundary of the access road at Eastern Portal. The Contractor was reminded to erect sand bag/concrete bund to prevent any sediment from carrying out.	The item was not rectified during the follow-up audit session.
Air Quality	11/02/2009	Dry unpaved area was observed at Western Portal. The Contractor was reminded to provide water-spray more frequently.	*Follow-up action was needed for the item.
	11/02/2009	Discarded cement bags were observed at near the nullah at Western Portal. The Contractor was reminded to clear them.	The site was not observed during the site inspection.
	18/02/2009	Dry unpaved area was observed at Western Portal. The Contractor was reminded to provide water-spray more frequently.	Rectification/improvement was observed during the follow-up audit session.
	18/02/2009	Over 20 cement bags were observed partly cover at Western Portal. The Contractor was reminded to cover them properly to prevent dust emission.	The item was not rectified during the follow-up audit session.
	27/02/2009	Discarded cement bags were observed at Eastern Portal. The Contractor was reminded to clear them.	Rectification/improvement was observed during the follow-up audit session.
Waste / Chemical Management	11/02/2009	Oil leakage was observed at the coffer dam at Western Portal. The Contractor was reminded to clear them as soon as possible.	Rectification/improvement was observed during the follow-up audit session.

Parameters	Date	Observations and Recommendations	Follow-up
	11/02/2009	General refuses were observed disposed not properly at Western Portal. The Contractor was reminded to clean them up.	Rectification/improvement was observed during the follow-up audit session.
	11/02/2009	Sediment and general refuses were observed deposited at the nullah at Western Portal. The Contractor was reminded to clear them.	The site was not observed during the site inspection.
	27/02/2009	Paint was observed leaking to the drainage channel at Intake W0. The Contractor was reminded to clear them properly.	Rectification/improvement was observed during the follow-up audit session.
	27/02/2009	General refuses were observed around the site at Western Portal. The Contractor was reminded to maintain the site tidiness.	*Follow-up action was needed for the item.
Reminders	04/02/2009	The Contractor was reminded of the followings: - Stockpile should be covered with tarpaulin after the works at Intake W0 and SM1 to control dust generation.	Rectification/improvement was observed during the follow-up audit session.
	04/02/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern, Western Portals especially the Intake sites.	*Follow-up action was needed for the item.
	11/02/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern, Western Portals especially the Intake sites.	*Follow-up action was needed for the item.
	18/02/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern, Western Portals especially the Intake sites.	*Follow-up action was needed for the item.
	27/02/2009	The Contractor was reminded of the followings: - Properly maintain the treatment process for the silty water at Tai Hang Stream at Eastern Portal.	*Follow-up action was needed for the item.
	27/02/2009	The Contractor was reminded of the followings: - Properly maintain the silt curtain at Western Portal to ensure that the silt curtain can function properly.	Rectification/improvement was observed during the follow-up audit session.
	27/02/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern, Western Portals especially the Intake sites.	*Follow-up action was needed for the item.

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 March 2009

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	04/03/2009	Sediment was observed accumulated at the boundary of the access road at Eastern Portal. The Contractor was reminded to erect sand bag/concrete bund to prevent any sediment from carrying out.	Rectification/improvement was observed during the follow-up audit session.
	04/03/2009	Ponding water was observed at behind of RE's site office at Western Portal. The Contractor was reminded to pave the uneven area to prevent standing water.	The item was not rectified during the follow-up audit session.
	11/03/2009	Standing water was observed at the pit area of the concrete blocks at Western Portal. The Contractor was reminded to pave them up.	Rectification/improvement was observed during the follow-up audit session.
	11/03/2009	Ponding water was observed at behind of RE's site office at Western Portal. The Contractor was reminded to pave the uneven area to prevent standing water.	Rectification/improvement was observed during the follow-up audit session.
	18/03/2009	Stockpile and exposed slope were observed without cover at Western Portal. The Contractor was reminded to cover those stockpiles and slope with tarpaulin.	Rectification/improvement was observed during the follow-up audit session.
	18/02/2009	Drainage channel was observed without cover at near the works at Intake PFLR1. The Contractor was reminded was reminded to cover it properly.	Rectification/improvement was observed during the follow-up audit session.
	18/02/2009	Standing water was observed at the pit area of the concrete blocks. The Contractor was reminded to pave them properly.	Rectification/improvement was observed during the follow-up audit session.
	26/03/2009	Standing water with vegetation waste was observed at the drip tray at Eastern Portal. The Contractor was reminded to clear them.	The item was not rectified during the follow-up audit session.
	26/03/2009	Standing water was observed at the uneven area at Western Portal. The Contractor was reminded to pave the uneven area and clear the standing water.	The item was not rectified during the follow-up audit session.
	26/03/2009	Standing water with chemical oil was observed at the drip tray at inside the tunnel of Western Portal. The Contractor was reminded to clear them and dispose as chemical waste.	The item was not rectified during the follow-up audit session.
Air Quality	04/03/2009	Dry unpaved area was observed at behind of RE's site office at Western Portal. The Contractor was reminded to provide water-spray to control dust emission.	Rectification/improvement was observed during the follow-up audit session.
	11/02/2009	Discarded cement bags were observed at near the nullah at Western Portal. The Contractor was reminded to clear them.	Rectification/improvement was observed during the follow-up audit session.
	18/03/2009	Cement bags were observed without cover at Western Portal. The Contractor was reminded to cover them properly.	Rectification/improvement was observed during the follow-up audit session.
	18/03/2009	Stockpile and exposed slope were observed without cover at Western Portal. The Contractor was reminded to cover those stockpiles and slope with tarpaulin.	Rectification/improvement was observed during the follow-up audit session.
	18/03/2009	Dry unpaved area was observed at Western Portal. The Contractor was reminded to provide water-spray more frequently.	Rectification/improvement was observed during the follow-up audit session.

Parameters	Date	Observations and Recommendations	Follow-up
Waste / Chemical Management	04/03/2009	General refuses were observed around the site at Western Portal. The Contractor was reminded to maintain the site tidiness.	Rectification/improvement was observed during the follow-up audit session.
	04/03/2009	Oil leakage was observed at underneath of TBM at Western Portal. The Contractor was reminded to clear them and dispose as chemical waste.	Rectification/improvement was observed during the follow-up audit session.
	11/03/2009	Oil leakage was observed from the crane with lorry at the access road at Eastern Portal. The Contractor was reminded to clear oil stains and well maintained the plant equipment to prevent further oil leakage.	Rectification/improvement was observed during the follow-up audit session.
	11/03/2009	Oil drum was observed standing on the bare ground and without label at Western Portal. The Contractor was reminded to provide drip tray and appropriate chemical labels.	The item was not rectified during the follow-up audit session.
	11/03/2009	Paint spillage at U-Channel was observed at Western Portal. The Contractor was reminded to clean them up and properly stored the paint container.	Rectification/improvement was observed during the follow-up audit session.
	18/03/2009	Oil dropped from the hose was observed at near the tunnel at Western Portal. The Contractor was reminded to clear the oil stains as soon as possible.	Rectification/improvement was observed during the follow-up audit session.
	18/03/2009	Oil drum was observed without drip tray and the remaining oil stayed at the top of the drum at Western Portal. The Contractor was reminded to provide drip tray for the oil drum and clear the remaining oil to prevent overflow.	Rectification/improvement was observed during the follow-up audit session.
	26/03/2009	Standing water with vegetation waste was observed at the drip tray at Eastern Portal. The Contractor was reminded to clear them.	The item was not rectified during the follow-up audit session.
	26/03/2009	Vegetation waste was observed accumulated at near the drainage channel at Eastern Portal. The Contractor was reminded to clear them.	Rectification/improvement was observed during the follow-up audit session.
	26/03/2009	Oil stains were observed at Intake W0. The Contractor was reminded to clear them and well-maintained the plant equipment to prevent further oil leakage.	Rectification/improvement was observed during the follow-up audit session.
	26/03/2009	Oil drum was observed without drip tray and appropriate labels at Western Portal. The Contractor was reminded to provide them with drip tray and attach with appropriate chemical labels.	The item was not rectified during the follow-up audit session.
	26/03/2009	Standing water with chemical oil was observed at the drip tray at inside the tunnel of Western Portal. The Contractor was reminded to clear them and dispose as chemical waste.	The item was not rectified during the follow-up audit session.
	Reminders	04/03/2009	The Contractor was reminded of the followings: - Please be reminded that adequate and relevant water quality mitigation measures should be provided for the construction works at Tai Hang Stream at Eastern Portal especially during rain events.

Parameters	Date	Observations and Recommendations	Follow-up
	04/03/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern, Western Portals especially the Intake sites.	*Follow-up action was needed for the item.
	11/03/2009	The Contractor was reminded of the followings: - Properly maintain the water quality mitigation measures at Tai Hang Stream so that the wastewater will not be discharging to the nullah.	*Follow-up action was needed for the item.
	11/03/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern, Western Portals especially the Intake sites.	*Follow-up action was needed for the item.
	18/03/2009	The Contractor was reminded of the followings: - Properly maintain the water quality mitigation measures at Tai Hang Stream so that the wastewater will not be discharging to the nullah.	*Follow-up action was needed for the item.
	18/03/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern, Western Portals especially the Intake sites.	*Follow-up action was needed for the item.
	26/03/2009	The Contractor was reminded of the followings: - Properly maintain the water quality mitigation measures at Tai Hang Stream so that the wastewater will not be discharging to the nullah.	*Follow-up action was needed for the item.
	26/03/2009	The Contractor was reminded of the followings: - Keep clear the standing water in the label bags that secure around the trees at Eastern, Western Portals especially the Intake sites.	*Follow-up action was needed for the item.

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
EP680/W10/XY0183	19/11/08	30/11/13	Industrial discharge (Intake W0, Stubbs Road, Wan Chai, HK)	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-RS0035-09	19/01/09	18/07/09	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-RS0894-08	19/12/08	18/03/09	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Hong Kong West Drainage Tunnel (Western Portal), Cyberport Road, Cyberport, Hong Kong (DSD Contract No. Dc/2007/10).	Valid
GW-RS0076-09	12/02/09	11/05/09	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Hong Kong West Drainage Tunnel (Western Portal), Cyberport Road, Cyberport, Hong Kong (DSD Contract No. Dc/2007/10).	Valid

Permit No.	Valid Period		Details	Status
	From	To		
GW-RS0184-09	17/03/09	16/07/09	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-RS0213-09	01/04/09	23/06/09	Construction Noise Permit for the use of powered mechanical equipment for carrying out construction work at Hong Kong West Drainage Tunnel (Western Portal), Cyberport Road, Cyberport, Hong Kong (DSD Contract No. Dc/2007/10).	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 m ³						34 m ³
May-08					566 m ³			2 m ³			39 m ³
Jun-08					486 m ³	30 m ³				0.4 m ³	6 m ³
Jul-08					1311 m ³	3004 m ³				0.2 m ³	45 m ³
Aug-08			1100 m ³		904 m ³	2404 m ³		2 m ³		0.2 m ³	34 m ³
Sep-08			1620 m ³		64 m ³	11504 m ³					11 m ³
Oct-08			650 m ³		2488 m ³	1882 m ³					28 m ³
Nov-08					4211 m ³	102 m ³		3 m ³		0.2 m ³	22m ³
Dec-08					9226 m ³			3 m ³			28 m ³
Jan-09			129 m ³		9530 m ³			2 m ³		1.3 m ³	39 m ³
Feb-09			199 m ³		5481 m ³			3 m ³			45 m ³
Mar-09			61 m ³		877 m ³			3 m ³		1.4 m ³	78 m ³
Total	0	0	3759 m ³	0	34184 m ³	18926 m ³	0	18 m ³	0	3.7 m ³	533 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 March 2009 are as of 31-03-09.

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**
(NIL in the reporting quarter)

Western Portal

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

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

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>Base on the information collected and the monitoring results, the complaint was considered not justifiable since (1) no exceedance of the noise monitoring results was recorded in May and (2) no non-compliance or observation on noise was recorded.</p>	
Com-2008-07-007	Construction site at Eastern Portal	2 July 2008	<p>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</p>	<p>According to the Contractor, only one generator and one drilling rig (Jumbo) were operated for the preparation works around 7:30a.m on 2 July 2008 at the Eastern portal. Construction noise was found from other construction site (Gammon Construction Limited) adjacent to Eastern Portal area.</p> <p>In response to the complaint, The Contractor review his forthcoming operations within the Eastern Portal site as previous they agreed, reschedule their current works activities, with immediate effect from 23 May 2008, that only site preparation works without noise nuisance to the nearby residents will be carried out from 7:00 am to 8:00 am at the Eastern Portal area.</p> <p>Additional noise monitoring was conducted on 16 and 17 July 2008 during the drilling rig (Jumbo), excavator and wheel loader were operated for drilling works.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>Base on the information collected and the monitoring results, the complaint was considered not justifiable since (1) no exceedance of the noise monitoring results was recorded in June and July 2008 and additional noise monitoring (2) no non-compliance or observation on noise was recorded.</p>	
COM-2008-10-011	Construction site at Western Portal	11 October 2008	<p>The complaint was lodged by one of the resident of Victoria Road, Ms Cheung on 11 October regarding about the noise nuisance generated from the construction works at Western Portal</p>	<p>According to the Contractor, excavation works and marine works including sheet piling works were also conducted at the time of complaint at Western Portal</p> <p>Additional noise monitoring was conducted on 15 October 2008, drilling works, excavation works and marine works including sheet piling works were also conducted. The construction noise levels measured during the construction works were well below the construction noise limit of 75 dB(A)</p> <p>The Contractor agreed to reschedule the starting time of the construction works to 8:15am on every Saturday that without noise nuisance from the construction works to the nearby residents will be carried out from 7:00 am to 8:15 am at the Western Portal area.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				<p>Base on the information collected, the noise level measured at outside Aegean Terrace during the construction works at Western Portal site were well below the construction noise limit of 75 dB(A). Also, the Contractor has implemented the remedial measure that reschedule the starting time of the construction works to 8:15am on every Saturday immediately after receiving the complaint to minimize the noise nuisance to the nearby residents.</p>	
COM-2008-10-012	Construction site at Intake TP5	15 October 2008	<p>The complaint was lodged by Mr Choi on 15 October 2008 regarding about the noise generated from the GI works, which starts from 8:30 hrs to 17:30 hrs next to Aigburth at May Road.</p>	<p>According to the information provided by the Contractor, only rotary type drill rigs and water pumps were operated for the GI works at the time of complaint at Intake TP5.</p>	Closed
COM-2008-10-013	Construction site at Intake TP5	31 October 2008	<p>The complaint was lodged by Mr Lai on 31 October 2008 regarding the black smoke is emitted and noise is generated from the machine at the site (Intake TP5), he needed to close the windows to prevent the black smoke from entering his flat and to attenuate the noise.</p>	<p>Additional site inspection and noise monitoring at the podium of the Valverde at May Road were conducted on 3 Nov 2008 and 24 Oct, 5 Nov, 7 Nov 2008 respectively.</p> <p>The Contractor agreed to reschedule the starting time of the construction works to 9:30am on every Saturday and 8:00 on normal weekdays that without noise nuisance to the nearby residents will be carried out from 7:00 am to 8:00 am at Intake TP5. Acoustic insulating materials</p>	

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2008-11-015	Construction site at Intake TP5	4 November 2008	The complaint was lodged by Ms Lee on 4 November regarding the noise nuisance generated from the construction works at Intake TP5.	<p>have been applied for enclosing water pump and rotary type drill rigs to minimize the noise nuisance to the nearest residents.</p> <p>Base on the information collected, the noise level measured at the podium of the Valverde at May Road were well below the construction noise limit of 75 dB(A) after the Contractor has implemented the remedial measure.</p>	
COM-2008-11-016	Construction site at Western Portal	17 November 2008	The complaint was lodged by Mr Cheng on 17 November 2008 regarding dust nuisance arising from the soil nailing works at the roadside slope of Cyberport Road.	<p>According to the information provided by the Contractor, soil nailing works were conducted and some plant equipments i.e air compressor and generator were operated at the time of complaint at Western Portal.</p> <p>Base on the regular air quality monitoring in November 2008 at Outside Aegean Terrace (AQ2) and Outside The Site Office at Western Portal (AQ3), the dust levels measured at AQ2 for 1 hour TSP and at AQ3 for 24 hour TSP were well below the Action Level (321µg/m³ for 1 hour TSP and 156µg/m³ for 24 hour TSP). Also, the Contractor has implemented the dust suppression measures to prevent dust nuisance from the construction activities including soil nailing works.</p>	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2008-11-019	Construction site at Western Portal	29 November 2008	The complaint was lodged by Ms Cheung on 1 December 2008 regarding noise nuisance at Western Portal at 08:30 hrs approx on 29 November 2008 and 00:30 on 1 December 2008.	<p>According to the information provided by The Contractor, no construction works was carried out at the temporary jetty at the time of complaint (00:30 on 1 December 2008) at Western Portal.</p> <p>However, base on the regular noise monitoring at Outside Aegean Terrace (NC3), the noise level measured during the construction works at Western Portal site were well below the construction noise limit of 75 dB(A).</p>	Closed
COM-2008-12-020	Construction site at Western Portal	28 December 2008	The complaint was lodged by Ms Cheung on 28 December 2008 regarding the excavator was found working within Western Portal works area on Sunday.	<p>The complaint was considered not justifiable as Construction Noise Permit (CNP) – CNP No. GW-RS0827-08 has been granted from EPD for carrying out the construction works at Hong Kong West Drainage Tunnel (Western Portal), Cyberport Road, Cyberport, Hong Kong (DSD Contract No. DC/2007/10) between 1 December 2008 at 1900 hours and 28 February 2009 at 2400 hours. The powered mechanical equipment can be operated during the hours as below:</p> <ul style="list-style-type: none"> a) Any day not being a general holiday between 1900 – 2300 hours b) General holiday (including Sundays) between 0700 – 1900 hours 	Closed

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2009-01-021	Muddy Water Discharged into Sea at Western Portal	21 January 2009	Muddy water was observed from discharging into the sea at Western Portal Site	<p>Base on the information collected, the muddy water discharged into the sea is considered due to the operations of excavation of stilling basin and poor condition of the silt curtain.</p> <p>The Contractor agreed to review their current provisions to prevent any muddy water from discharging into the sea again and close check the condition of the silt curtain.</p>	Closed
COM-2009-01-022(A)	Construction site at Western Portal	12 January 2009	The complaint was lodged by Mr Chan, the assistant of Mr CHAN Ngok pang (Southern District Councillor) about the resident in Baguio Villa near Victoria Road, Mr Ronald Chan concerns on the noisy activities carried out at Western Portal site.	<p>Base on the information collected, the noise level measured at outside Aegean Terrace during the construction works at Western Portal site were well below the construction noise limit of 75 dB(A). Aegean Terrace is at location close to the major site activities compared with Baguio Vila. Also, The Contractor agreed to reschedule their current works activities, no noisy work will be carried out at Western Portal Site before 8:00a.m.</p>	Closed
COM-2009-01-022(B)		21 January 2009	The complaint was lodged by resident of Aegean Terrace at Sassoon Road about the noise nuisance generated from Western Portal Site.		
COM-2009-01-022(C)		21 January 2009	The complaint was lodged by the resident in Baguio Villa near Victoria Road about noisy works at Western Portal Site.		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
COM-2009-02-023	Construction site at Eastern Portal	7 February 2009	Complaint of Construction Noise at Early Morning (07:45hrs) at Eastern Portal Site	<p>Based on the information collected, the construction noise at about 07:45hrs on 7 February 2009 was due to the checking of the backhole by the sub-contractor.</p> <p>The Contractor was reminded to strengthen their site supervision and provide sufficient site-specific environmental training for sub-contractor to ensure that such situation would not be recurred.</p>	Closed
COM-2009-03-025	Construction site at Western Portal	2 March 2009 4 March 2009	Complaint of noise generated by midnight works and night-time lighting at Western Portal Site	<p>Base on the information collected, the regular noise monitoring was conducted during the construction works at the restricted hours. The noise measurement results were well below the construction noise limit of 65dB(A) for the period of 0700-2300 hrs on holiday; and 1900-2300 hrs on all other days and baseline level during the night time.</p> <p>The Contractor was reminded to strengthen their site supervision and implement necessary noise mitigation measures to minimize and avoid the construction noise impact to the residents nearby especially during the restricted hours.</p> <p>Regarding the complaint of spotlight hanging on the plant at the site portion WP, The Contractor was reminded to implement the mitigation measures for Visual during the construction by controlling the night-</p>	Closed
COM-2009-03-026		7 March 2009	Complaint of pipe hitting noise at midnight at Western Portal Site.		

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
				time lighting so that the residual visual impacts can be accepted.	