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NT EAST Development Office

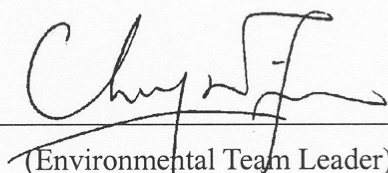
Contract No. ST89/02

Sha Tin Heights Tunnel and Approaches

Environmental Monitoring and Audit
Quarterly Report (Version 1.0)

February to April 2006

Certified By


(Environmental Team Leader)

REMARKS:

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

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TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	1
Environmental Monitoring Works	1
Environmental Complaint and Prosecution	1
Environmental Licensing and Permitting	2
Future Key Issues.....	2
1. INTRODUCTION.....	3
2. PROJECT CHARACTERISTICS	4
Project Organization and Contacts of Key Management	4
Construction Programme and Synopsis of Work.....	4
3. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS	4
Monitoring Parameters and Monitoring Locations	4
Monitoring Methodology and Calibration Details	4
Environmental Quality Performance Limits (Action and Limit Levels).....	4
Environmental Mitigation Measures	4
4. MONITORING RESULTS	5
Weather Conditions	5
Air Quality.....	5
Noise.....	5
5. AUDIT RESULTS.....	6
Implementation Status of Environmental Mitigation Measures	6
Site Audit Summary.....	6
Status of Environmental Licensing and Permitting.....	7
Advice on Solid Waste Management Status	7
6. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS).....	7
Summary of Exceedances	7
Review of the Reasons for and the Implications of Non-compliance.....	8
Summary of Actions Taken.....	8
7. ENVIRONMENTAL COMPLAINTS	8
Complaints Log	8
8. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS	8
9. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS	8

LIST OF FIGURES

Figure 1	Site Layout Plan
Figure 2a	Location of Monitoring Stations
Figure 2b	Location of Monitoring Stations
Figure 3	Project Organization Chart

LIST OF APPENDICES

Appendix A	Contact Details of the Project Organisation
Appendix B	Construction Programme
Appendix C	Monitoring Requirements
Appendix D	Environmental Quality Performance (Action/Limit) Levels
Appendix E	Implementation Status of Environmental Mitigation Measures (EMIS)
Appendix F	Graphical Presentation of Air Quality Monitoring Results
Appendix G	Graphical Presentation of Noise Monitoring Results
Appendix H	Summary Status of Environmental Licences and Permits
Appendix I	Complaint Log
Appendix J	Summary report of Exceedances

EXECUTIVE SUMMARY

1. This is the fourteenth Environmental Monitoring and Audit (EM&A) Quarterly Summary Report prepared by Cinotech Consultants Limited for the “Sha Tin Heights Tunnel and Approaches” (the Project). This summary report presents EM&A works performed in the period between February and April 2006.
2. The construction activities undertaken in this reporting quarter were:
 - Construction of Portal Buildings;
 - Slope works;
 - Tunneling works;
 - Bridge superstructure works;
 - Drainage works;
 - Construction of retaining structure and;
 - Demolition of Temporary Access Road no.1; and
 - Piling works at Che Kung Miu.

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed regularly as stipulated in the EM&A Manuals 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.

Air Quality

1-hr TSP Monitoring

4. All 1-hour TSP monitoring was conducted as scheduled during the reporting quarter. One Action Level exceedance was recorded at Station A4 (Garden Villa) on 25 April 2006, that was considered due to the Project and the exceedance report was issued on 25 April 2006. The Contractor was reminded to implement remedial measures and rectify any unacceptable practice. The exceedance report is attached in Appendix H. No Limit Level exceedance was recorded.

24-hr TSP Monitoring

5. All 24-hour TSP monitoring was conducted as scheduled during the reporting quarter. No Action/Limit Level exceedance was recorded.

Construction Noise

6. All construction noise monitoring was conducted as scheduled in this reporting quarter.
7. One Action Level exceedance was recorded as a complaint received on 7 February 2006 and one Limit Level at Station N5 (Garden Villa) on 16 February 2006 was recorded.

Environmental Complaint and Prosecution

8. No environmental prosecution was recorded in the reporting quarter.

9. One environmental complaint was received by EPD on 7 February 2006, which was about the construction noise and dust from the works at Che Kung Miu Road near Tin Sam Village. The complaint was considered valid and related to the project works. The complaint investigation report was issued by ET on 17 February 2006.

Environmental Licensing and Permitting

10. License/Permits granted to the Project include the Environmental Permit (EP), Construction Noise Permits (CNP), Waste Disposal (Chemical Waste) License and Water Discharge Permit.

Future Key Issues

11. Slope upgrading works F437, demolition of TAR1 and rising existing manhole level at Che Kung Miu will be the major construction activities for the coming month.
12. The anticipated environmental impacts will be mainly on surface runoff during rainy season, construction dust and noise impact during the slope upgrading work, demolition of TAR1 and rising existing manhole level at Che Kung Miu.

1. INTRODUCTION

- 1.1 Sha Tin Heights Tunnel and Approaches (SHT) (hereinafter called the “Project”) forms part of the Route 9 (Formerly Route 8) between Cheung Sha Wan and Sha Tin project, which will be a new expressway connecting west Kowloon and Sha Tin. The Project, the entrusted portion of the Route 9 (Formerly Route 8) project, is being managed and implemented by Civil Engineering & Development Department (CEDD).
- 1.2 The Project works mainly comprise the site formation for a toll plaza at the valley of Sha Tin Heights, the construction of 1 km long dual three-lane tunnels under Sha Tin Heights, a 0.6 km long dual two-lane tunnel approach road in Tai Wai, two slip road viaducts with approximately total length of 1 km connecting to Che Kung Miu Road, associated noise barriers and noise enclosures, drainage, slope works and landscape works. The remainder of the Route 9 (Formerly Route 8) (Main Portion, R9K) project forms the Kowloon Section and is being managed and implemented separately by Highways Department.
- 1.3 The Project is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449, EIAO). An environmental impact assessment (EIA) report has been prepared in 1998 for the Route 9 (Formerly Route 8) project to consider the key issues of noise, air quality, water quality, ecological, construction waste, landscape and visual, land use and culture impacts, and identify possible mitigation measures. An updated Final EIA report was subsequently completed in August 1999 to cater for some changes in the main portion. The 1998 and 1999 Route 9 (Formerly Route 8) EIA (R9 EIA Reports) reports were included in the EIA register under the EIAO as report number EIA-135/BC and AEIAR-022/1999 respectively. EM&A Manuals for each of the R9 EIA reports were also included as part of the EIA reports in the register.
- 1.4 Subsequent to the endorsement of the R9 EIA reports by EPD in November 1999, the R9 project was deferred to start in 2002/2003 for completion by 2006/07. The implementation of the Route 9 (Formerly Route 8) project was then separated into the SHT and R9K portions. Meanwhile further design amendments had also been proposed for the SHT during the detailed design stage to resolve various engineering constraints. In view of these changes, an Environmental Review on the SHT was undertaken to update the findings of the R9 EIA reports. The Environmental Review report for R9S was completed in September 2001 and an Environmental Permit No. EP-104/2001 was issued on 4th October 2001 for the Project.
- 1.5 The works of the SHT is constructed under CEDD’s construction Contract No. ST 89/02 “Sha Tin Heights Tunnel and Approaches”. The site layout of the Project is shown in Figure 1.
- 1.6 Cinotech Consultants Limited (Cinotech) was commissioned by CEDD to undertake the Environmental Team (ET) Services for the Project. This is the fourteenth Quarterly EM&A report summarizing the EM&A works for the Project between February and April 2006.

2. PROJECT CHARACTERISTICS

Project Organization and Contacts of Key Management

- 2.1 An organization structure and the line of communication were set up for the Project between the CEDD, Engineer Representative (ER), Independent Environmental Checker (IEC), the Contractor and Environmental Team (ET). The organization chart and contact details are shown in Appendix A and Figure 3.

Construction Programme and Synopsis of Work

- 2.2 The construction programme is presented in Appendix B. The construction activities undertaken in this reporting quarter were:
- Construction of Portal Buildings;
 - Slope works;
 - Tunneling works;
 - Bridge superstructure works;
 - Drainage works;
 - Construction of retaining structure and;
 - Demolition of Temporary Access Road no.1; and
 - Piling works at Che Kung Miu.

3. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

- 3.1 The EM&A Manuals designate locations for the ET to monitor environmental impacts in terms of air quality and noise due to the Project. The Project area and monitoring locations are depicted in Figures 2a and 2b. Appendix C 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 Manuals. 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 D.

Environmental Mitigation Measures

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

4. MONITORING RESULTS

- 4.1 The summary exceedance report in this reporting quarter is presented in Appendix J.

Weather Conditions

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

Air Quality

- 4.3 All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter.
- 4.4 On 25 April 2006, one Action Level exceedance for 1-hour TSP was recorded at Station A4 (Garden Villa). According to our observation, the major dust source was due to the operation of soil nailing at the slop adjacent to Garden Villa. The exceedance report was issued on 25 April 2005 and the Contractor was reminded to implement remedial measures and rectify any unacceptable practice. Besides, the follow-up measurement was conducted on 26 and 27 April 2006.
- 4.5 No Action/Limit Level exceedance for 24-hour TSP was recorded during the reporting quarter.
- 4.6 The monitoring data of 1-hour and 24-hour TSP Levels are shown in the appendices of the Monthly Reports. The graphical presentations of the monitoring results are shown in Appendix F.

Noise

- 4.7 All construction noise monitoring was conducted as scheduled during the reporting quarter.
- 4.8 On 7 February 2006, one Action Level exceedance was recorded due to a public complaint received, which was about the construction noise and dust generating from the works area at Che Kung Miu near Tin Sam Village.
- 4.9 Besides, one Limit Level exceedance was recorded at Station N5 (Garden Villa) on 16 February 2006. According to the field observation, the exceedance was considered related to the breaking works at TAR1. Notice of exceedance was issued to the Contractor on 17 February 2006. Mitigation measures, such as enclosing the breaker with acoustic absorbing material, were implemented by the Contractor to rectify the situation. No further exceedance was recorded.
- 4.10 The noise monitoring data are attached in the appendices of the Monthly Reports. The graphical plots of the noise monitoring results in this reporting quarter are shown in Appendix G.

5. AUDIT RESULTS

Implementation Status of Environmental Mitigation Measures

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

Site Audit Summary

Water Quality

- 5.2 Stagnant water was observed in U-channel and holes of concrete blocks at Che Kung Miu. The contractor was reminded to remove stagnant water to prevent mosquito breeding.
- 5.3 Soil deposited on road was observed at Che Kung Miu. The contractor was reminded to rectify the situation.
- 5.4 Potential discharge of polluted water to box culvert at North Portal Building was noted. The contractor was reminded to maintain the temporary drainage system to ensure all construction wastewater is properly treated before discharge.
- 5.5 Silt and sediment were found accumulated at the box culvert of Portion 9. The Contractor was reminded to clean up the sand.
- 5.6 Stagnant water was observed accumulating on the curtain which is used to cover the piling machine and other equipment and inside the U-channel near Tin Sum Tsuen. The Contractor was reminded to remove the water and keep the environment tidy. Larvicide was recommended to be sprayed on the channel for prevention of mosquito breeding.
- 5.7 Wastewater was observed inside the silt retention pond at Retaining Wall No. 3 of Che Kung Miu. The Contractor was reminded to pump out the wastewater if necessary.
- 5.8 Small amount of stagnant water with floating debris was noted near the site entrance at Che Kung Miu Road after rainstorm. The Contractor was reminded to pump the water away as soon as possible.

Air Quality

- 5.9 Fugitive dust emission was observed when vehicles passed through a haul road at Retaining Wall No. 3 of Che Kung Miu. The Contractor was reminded to water the haul road regularly and clear dusty material to minimize dust emission.
- 5.10 Open stockpile was observed at site (Abutment 4) in Che Kung Miu Road. The Contractor was recommended to cover the stockpile with impervious sheeting or keep the stockpile surface wet.
- 5.11 Water spraying was applied for soil nailing at the retaining wall underneath Garden Villa to avoid dust generation during inspection. The Contractor was recommended to cover the top side of the working platform with impervious sheeting to enhance the dust control measures.

Chemical and Waste Management

- 5.12 General wastes were observed at works area of Che Kung Miu and Tai Po Road Look out. The contractor was reminded to clean up wastes regularly.

Permit / Licenses

- 5.13 No environmental deficiencies were identified during the site environmental inspection.

Status of Environmental Licensing and Permitting

- 5.14 Environmental licenses and permits including Environmental Permit for the Project, Construction Noise Permits (CNPs), Waste Disposal (Chemical Waste) License and Water Discharge Permit were in place and valid during this reporting quarter. A summary status of licenses and permits is given in Appendix H.

Advice on Solid Waste Management Status

- 5.15 The solid waste generated from the Project site office was mainly general refuse that was collected by a licensed collector on an as need basis.

6. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)**Summary of Exceedances***1-hr TSP*

- 6.1 One Action Level exceedance for 1-hour TSP was recorded at Station A4 (Garden Villa) on 25 April 2006. It was considered that the exceedance was due to the Project and the Contractor was reminded to implement remedial measures and rectify any unacceptable practice. No Limit Level exceedance was recorded.

24-hr TSP

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

Noise

- 6.3 On 7 February 2006, one Action Level exceedance was recorded due to a public complaint received, which was about the construction noise and dust generating from the works area at Che Kung Miu near Tin Sam Village.
- 6.4 One Limit Level exceedance was recorded at Station N5 (Garden Villa) on 16 February 2006. According to the field observation, the exceedance was considered related to the breaking works at TAR1. Notice of exceedance was issued to the Contractor on 17 February 2006. Mitigation measures, such as enclosing the breaker with acoustic absorbing material, were implemented by the Contractor to rectify the situation. No further exceedance was recorded.

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

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

Summary of Actions Taken

- 6.6 In this reporting quarter, the following mitigation measures were implemented:
- Frequent watering on haul roads was applied for dust suppression;
 - Excavated/dusty materials have been covered by tarpaulin or water sprayed;
 - Wheel washing facilities were provided;
 - Groundwater pumped out was recycled via sediment tanks; and
 - 'AquaSed' has been setup to incorporate with the modified desilting system.

7. ENVIRONMENTAL COMPLAINTS**Complaint Log**

- 7.1 The implementation status of the complaint handling procedure is summarized in Appendix I.
- 7.2 A public complaint was received on 7 February 2006 and was about the construction noise and dust generated during construction of pre-bored H-piles at the works area of Che Kung Miu near Tin Sam Village. A series of mitigation measures had been implemented by the Contractor to rectify the situation. The Environmental Team had arranged ad-hoc noise measurements on 8, 9, 14 and 16 February 2006 at Tin Sam Village. No exceedance of daytime construction noise criterion (75 dB(A)) was noted. Besides, inspections were carried out on 9 and 16 Feb 06 by Environmental Team to observe the situation and verify the mitigation measures taken by the Contractor. The mitigation measures by the Contractor were found in the place. The complaint was considered valid and related to the Project works. A complaint investigation report was issued by ET on 17 February 2006.

8. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- 8.1 No environmental prosecution was recorded in the reporting quarter.

9. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

- 9.1 Slope upgrading works F437, demolition of TAR1 and rising existing manhole level at Che Kung Miu will be the major construction activities for the coming quarter.
- 9.2 The anticipated environmental impacts will be mainly on surface runoff during rainy season, construction dust and noise impact during the slope upgrading work, demolition of TAR1 and rising existing manhole level at Che Kung Miu.