

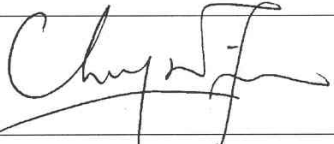
**Civil Engineering & Development Department  
NT EAST Development Office**

**Contract No. ST89/02**

**Sha Tin Heights Tunnel and Approaches**

**Environmental Monitoring and Audit  
Quarterly Report (Version 1.0)**

August to October 2004

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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## EXECUTIVE SUMMARY

1. This is the eighth 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 August to October 2004.
2. The construction activities undertaken in this reporting quarter were:
  - Excavation works;
  - Backfilling;
  - Tunneling;
  - Bored pile foundation;
  - Construction of Retaining Wall; and
  - Drainage works

### 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-hr TSP monitoring was conducted as scheduled during the reporting period.
5. Action Level exceedances were recorded at monitoring station A4 (Garden Villa) on 12 August 2004 and at monitoring station A3 (Shatin Heights) on 17 August 2004.
6. Limit Level exceedances was recorded at monitoring station A4 (Garden Villa) on 17 August 2004.
7. According to ET’s field observation, such exceedances were not related to the Project since no dusty construction activities from the Project were observed.

##### 24-hr TSP Monitoring

8. All 24-hr TSP monitoring was conducted as scheduled during the reporting period. No Action/Limit Level exceedance was recorded in the reporting quarter.

#### *Construction Noise*

9. All construction noise monitoring was conducted as in this reporting quarter.
10. One (1) Limit Level exceedance was recorded at Station N5 (Garden Villa) on 3 August 2004 during the measurement at restricted hours (Evening period). According to ET’s investigation, such exceedance was due to traffic noise at Tai Po Road and was not related to the Project.

**Environmental Complaint and Prosecution**

11. No environmental prosecution was recorded in the reporting quarter.
12. No environmental complaint was received in the reporting quarter.

**Environmental Licensing and Permitting**

13. License/Permits granted to the Project include the Environmental Permit (EP), Construction Noise Permits (CNP), Waste Disposal (Chemical Waste) License and Water Discharge Permit.
14. Total seven CNPs (GW-TN0396-04, GW-TN0397-04, GW-TN0445-04, GW-RN0454-04, GW-RN0497-04, GW-RN0532-04 & GW-RN0537-04) were issued by EPD in the reporting quarter.

**Future Key Issues**

15. Excavation works, drainage works and tunneling works will be the major construction activities for the coming quarter. The anticipated environmental impact will be mainly on surface runoff and construction dust due to the transition of wet season to dry season.

## 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 4<sup>th</sup> 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 eighth Quarterly EM&A report summarizing the EM&A works for the Project between August to October 2004.

## 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 site activities during the reporting period are summarized in Table 2.1.

**Table 2.1 Summary of Works Undertaken in the Reporting Months**

Item	Work Activity	Month		
		August 04	September 04	October 04
1.	Excavation works	✓	✓	✓
2.	Backfilling	✓	✓	✓
3.	Tunneling	✓	✓	✓
4.	Bored pile foundation	✓	✓	✓
5.	Construction of Retaining Wall	✓	✓	✓
6.	Drainage works	✓	✓	✓

### **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 or cloudy. The weather conditions for each individual monitoring session were presented in the field record sheets.

##### **Air Quality**

4.3 All 1-hr and 24-hr TSP monitoring was conducted as scheduled during the reporting period.

4.4 Action Level exceedance was recorded at monitoring station A4 (Garden Villa) on 12 August 2004. According to ET's field observation, no observation dust source was identified at the Project and appropriate dust mitigation measure (water spraying) was applied at Temporary Access Road no. 1 near Garden Villa. The main dust source was highly due to the traffic dust at Tai Po Road.

4.5 Limit Level exceedance was recorded at monitoring station A4 (Garden Villa) and Action Level exceedance was recorded at monitoring station A3 (Shatin Heights) on 17 August. According to ET's field observation, smog was observed in the area. Since there was no dusty construction activity was observed and similar monitoring results were also recorded in such monitoring day within Sha Tin area, it was concluded that the exceedances were due to poor ambient air condition and not related to the Project.

4.6 According to ET's field observation, such exceedances were not related to the Project since no dusty construction activities were observed.

4.7 The monitoring data of 1-hr and 24-hr TSP Levels are shown in the appendices of the Monthly Reports. The graphical presentations of the monitoring results are shown in Appendix F.

##### **Noise**

4.8 All construction noise monitoring was conducted as scheduled during the reporting quarter.

4.9 One (1) Limit Level exceedance was recorded at Station N5 (Garden Villa) on 3 August 2004 during the measurement at restricted hours (Evening period). According to ET's investigation, such exceedance was due to traffic noise at Tai Po Road and was not related to the Project.

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 Accumulated sand and silt were found in u-channels at South Portal, Portion 8 and Portion 9. The Contractor was reminded to remove such silts more frequently in order to ensure all silt removal facilities, channels and manholes are functioning properly at all times.
- 5.3 Muddy water discharged from a sum-pit was observed at Che Kung Mui Road. Improvement was found on next audit day.
- 5.4 Sand and rock materials were stored closely to the covered manhole (DP8) at Portion 9. The Contractor was reminded to relocate the storage area in order to avoid manhole blockage due to runoffs.
- 5.5 Stagnant water was found at South Portal Building. The Contractor was reminded to remove all stagnant water on site.

##### *Air Quality*

- 5.6 Smoke emitted from operating excavator was observed at Portion 9 (Portal Building). The Contractor was reminded to well maintain the good working condition of all fuel driven mechanical equipment.

##### *Chemical and Waste Management*

- 5.7 Oil leakage from drip tray was found at Portion 4. The Contractor was reminded to remove the oily water properly and regularly.
- 5.8 Oil stain was found under the stockpile of tie-rod at South Portal building. The Contractor was reminded to handle and store the tie-rod more properly to avoid oil leakage at such area.
- 5.9 Oil drums placed on bare ground were observed at South Portal building. The Contractor was reminded to provide drip trays for oil drum(s).

##### *Noise*

- 5.10 No environmental deficiency was observed during these subsequent site inspections.

*Permit / Licenses*

5.11 No violation was observed during these subsequent site inspections.

**Status of Environmental Licensing and Permitting**

5.12 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**

5.13 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 Action Level exceedances were recorded at monitoring station A4 (Garden Villa) on 12 August 2004 and at monitoring station A3 (Shatin Heights) on 17 August 2004.
- 6.2 Limit Level exceedances was recorded at monitoring station A4 (Garden Villa) on 17 August 2004.
- 6.3 According to ET's field observation, such exceedances were not related to the Project since no dusty construction activities were observed.

#### *24-hr TSP*

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

#### *Noise*

- 6.5 One (1) Limit Level exceedance was recorded at Station N5 (Garden Villa) on 3 August 2004 during the measurement at restricted hours (Evening period). According to ET's investigation, such exceedance was due to traffic noise at Tai Po Road and was not related to the Project.

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

- 6.6 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

- 6.7 In this reporting quarter, the following mitigation measures were implemented:
- Drip trays for oil storage of oil buckets have been provided;
  - 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
  - 'AquaSep' has been setup to incorporate with the modified desilting system.

## **7. ENVIRONMENTAL COMPLAINTS**

### **Complaints Log**

- 7.1 All complaints have been handled in accordance with the EM&A Manuals. The implementation status of the complaint handling procedure is summarized in Appendix I.
- 7.2 No complaint was received in the reporting period.

## **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 Excavation works, drainage works and tunneling works will be the major construction activities for the coming quarter. The anticipated environmental impact will be mainly on surface runoff and construction dust due to the transition of wet season to dry season.