

Territory Development Department
NT EAST Development Office

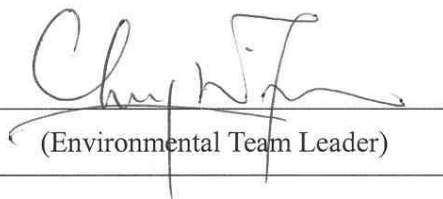
Sha Tin New Town, Stage II

**Route 9 between Cheung Sha Wan and
Sha Tin – Entrusted Portion**

**Environmental Monitoring and Audit
Quarterly Report (Version 1)**

May 2003 to July 2003

Certified By



(Environmental Team Leader)

REMARKS:

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

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CINOTECH CONSULTANTS LTD

Room 1601-1610, Delta House,

3 On Yiu Street,

Shatin, NT, Hong Kong

Tel: (852) 2151 2083 Fax: (852) 3107 1388

Email: info@cinotech.com.hk

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EXECUTIVE SUMMARY

1. This is the third Environmental Monitoring and Audit (EM&A) Quarterly Summary Report prepared by Cinotech Consultants Limited for the “Sha Tin New Town, Stage II Route 9 between Cheung Sha Wan and Sha Tin – Entrusted Portion” (the Project). This summary report presents EM&A works performed in the period between May 2003 and July 2003.
2. The construction activities undertaken in this reporting quarter were:
 - Site clearance works
 - Ground investigation works
 - Site investigation works
 - Excavation works
 - Bund wall construction
 - Installation of soil nail
 - Formation of hoarding and fencing
 - Slope cutting and filing work

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-hour TSP Monitoring

4. All 1-hour TSP monitoring was conducted as scheduled, except that the monitoring at station A2 on 5th May and 9th June 2003, and at station A3 on 13th June 2003 was suspended due to adverse weather. Make-up monitoring was conducted on 7th May and 10th June 2003 for station A2. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

5. All 24-hour TSP monitoring was conducted as scheduled. No Action/Limit Level exceedance was recorded in this reporting period.

Construction Noise

6. All construction noise monitoring was conducted as scheduled, except for the monitoring sessions on 9th and 16th June 2003. Due to rainstorms, the monitoring works at stations N6 and N8 on 9th June 2003 were rescheduled to 10th June 2003, and at stations N5 and N8 on 16th June 2003 were rescheduled to 17th June 2003. Additional monitoring works at station N5 (Garden Villa) were conducted on 8th May and 15th July 2003 for the construction works on public holidays and to confirm the noise Limit Level exceedance were recorded on 14th July 2003, respectively.
7. One Action Level exceedance (complaint) was raised by a resident living at Garden Villa on 5th May 2003.

8. Totally four limit exceedance were recorded in this reporting quarter. One Limit Level exceedance was recorded at station N5 (Garden Villa) on 14th July 2003 and three Limit Level exceedances were recorded at station N7 (Lau Pak Lok Secondary School) on 30th June, 14th and 22nd July 2003.

Environmental Complaint and Prosecution

9. Following the site inspection on 26th June 2003, the Environmental Protection Department (EPD) advised the Contractor that the design of the desilting system in construction site near Portion 8 was improper and polluted wastewater was discharged.
10. A total of 2 complaints have been received in this reporting quarter.
11. One complaint was reported was raised by a resident living at Garden Villa on 5th May 2003. The complaint was about the construction noise on public holidays at Tai Po Road and construction wastes accumulated on the footpath outside Garden Villa. The Environmental Team (ET) carried out investigation and submitted a complaint investigation report to EPD and ER on 14th May 2003.
12. Another complaint was received by the Contractor's Hotline on 14th July 2003. It was about the dust pollution generation from the construction works at Temporary Access Road No. 1. ET conducted the site investigation and the complaint investigation report was submitted to ER on 21st July 2003.

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.

Future Key Issues

14. Excavation works, geotechnical works (soil nail), drainage works and site formation works will be the major construction activities for the coming quarter. The anticipated environmental impact will be mainly on dust and noise due to earthworks and the surface runoff generated in rainy season.

1. INTRODUCTION

- 1.1 Route 9 (Sha Tin Section) (R9S) (hereinafter called the “Project”) forms part of the Route 9 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 project, is being managed and implemented by Territory Development Department (TDD).
- 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 (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 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 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 project was then separated into the R9S and R9K portions. Meanwhile further design amendments had also been proposed for the R9S during the detailed design stage to resolve various engineering constraints. In view of these changes, an Environmental Review on the R9S 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 R9S is constructed under TDD’s construction Contract No. ST 89/02 “Route 9 – 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 TDD to undertake the Environmental Team (ET) Services for the Project. This is the third Quarterly EM&A report summarizes the EM&A works for the Project between May 2003 and July 2003.

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 TDD, 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		
		May 03	June 03	July 03
1.	Site clearance works	✓	✓	✓
2.	Site investigation works	-	✓	✓
3.	Excavation works	✓	✓	✓
4.	Ground investigation works	✓	-	-
5.	Bund wall construction	✓	✓	✓
6.	Slope cutting and filling work	✓	✓	✓
7.	Installation of soil nail	✓	✓	✓
8.	Formation of hoarding and fencing	✓	✓	-

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

Weather Conditions

- 4.1 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

- 4.2 Dust monitoring was conducted as scheduled in the reporting quarter, except that 1-hour TSP monitoring works at station A2 on 5th May and 9th June 2003, and at station A3 on 13th June 2003 were suspended due to inauspicious weather. Make-up monitoring was conducted on 7th May and 10th June 2003 for station A2.
- 4.3 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.

1-hour TSP

- 4.4 All measured 1-hour TSP levels in this reporting quarter were below the Action/Limit Levels.

24-hour TSP

- 4.5 No exceedance of 24-hour TSP monitoring results was recorded in this reporting quarter.

Noise

- 4.6 Noise monitoring was performed at four designated locations during the daytime period (0700 to 1900) as scheduled, except on 9th and 16th June 2003. Due to rainstorms, the monitoring works at stations N6 and N8 on 9th June 2003 were rescheduled to 10th June 2003, and at stations N5 and N8 on 16th June 2003 were rescheduled to 17th June 2003. Additional monitoring works at station N5 (Garden Villa) were conducted on 8th May 2003 for the construction works on public holidays. One noise exceedance was recorded on 14th July 2003 and ET conduct the repeated monitoring on 15th July 2003. No further noise exceedance was recorded on the repeated monitoring.
- 4.7 The noise monitoring data are attached in the appendices of the Monthly Reports. The graphical plot of the noise monitoring results in this reporting quarter are shown in Appendix G.
- 4.8 One Action Level exceedance (complaint) was raised by a resident living at Garden Villa on 5th May 2003. The complaint, which was transferred by Environmental Protection Department (EPD) to Environmental Team (ET) on 6th May 2003. The complaint was about construction noise on public holidays at the construction site near Garden Villa at Tai Po Road and construction wastes accumulated on the footpath outside Garden Villa. ET conducted the site investigation and the complaint investigation report (presented in Appendix N) was submitted to EPD on 14th May 2003.
- 4.9 Four noise limit level exceedance were recorded in the reporting quarter. One Limit Level exceedance was recorded at station N5 (Garden Villa) on 14th July 2003. Three Limit Level exceedances were recorded at station N7 (Lau Pak Lok Secondary School) on 30th June, 14th and 22nd July 2003 respectively.

- 4.10 For the noise Limit Level exceedance at station N5 on 14th July 2003, ET conducted the on-site investigation and identified the major noise contributed by the operation of the excavators, lorries and helicopter. In accordance with the Event Action Plan for Construction Noise, an repeated noise monitoring was conducted on 15th July 2003. No further noise exceedance was recorded at N5 on 15th July 2003.
- 4.11 For noise Limit Level exceedance at station N7 on 14th and 22nd July 2003, ET conducted the on-site investigation and identified the major noise sources were the road traffic in Tai Po Road and the operation of excavators from the construction site nearby which is not a site of the Project. No direct evidence showed that the exceedances were due to the Project works and the exceedances were considered to be invalid.
- 4.12 The summary exceedance report in this reporting quarter is presented in Appendix J.

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 Muddy water discharge to the river from the existing desilting system in Portion 8 was observed in the audit sessions in this reporting quarter. The Contractor was recommended to modify the existing desilting system and provide additional mitigation measures to rectify the condition. Follow up the comment, ‘AquaSep’ was employed and incorporated with the modified desilting system were observed.
- 5.3 Muddy water discharged into box culvert at Portion 9 was observed on 24th July 2003 after Typhoon Signal No. 8.
- 5.4 Silty water discharged from the sedimentation tank at Che Kung Miu Road was observed on 31st July 2003.

Air Quality

- 5.5 It was observed on 5th June and 19th June 2003 that the excavator and breaker operated without water spraying.
- 5.6 Insufficient water spraying to minimize the dust generation was observed in site inspections in this reporting period between May and July 2003.

Chemical and Waste Management

- 5.7 It was observed that oil dripped on the bare ground on 19th June 2003.

Noise

- 5.8 No violation was observed during these subsequent site inspections.

Permit / Licenses

- 5.9 No violation was observed during these subsequent site inspections.

Status of Environmental Licensing and Permitting

- 5.10 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

- 5.11 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

- 6.1 All measured 1-hour and 24-hour TSP levels were below the Action/Limit Levels in this reporting period.
- 6.2 Totally four limit exceedance were recorded in this reporting quarter. One Limit Level exceedance was recorded at station N5 (Garden Villa) on 14th July 2003 and four Limit Level exceedances were recorded at station N7 (Lau Pak Lok Secondary School) on 30th June, 14th and 22nd July 2003.
- 6.3 For the noise Limit Level exceedance at station N5 on 14th July 2003, the main noise source was identified as the operation of the excavators, lorries and helicopter. In accordance with the Event Action Plan for Construction Noise, an repeated noise monitoring was conducted on 15th July 2003 and no further exceedance was recorded.
- 6.4 For noise Limit Level exceedance at station N7 on 14th and 22nd July 2003, ET conducted the on-site investigation and identified the major noise contribution by the road traffic in Tai Po Road and the operation of excavators from the construction site nearby which is not a site of the Project. No direct evidence showed that the exceedances were due to the Project works and the exceedances were considered to be invalid.

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.
- 6.6 Following the site inspection on 26th June 2003, the Environmental Protection Department (EPD) advised the Contractor that the design of the desilting system in construction site near Portion 8 was improper and polluted wastewater discharged was observed.

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 at Portion 8 to incorporate with the modify desilting system.

7. ENVIRONMENTAL COMPLAINTS

Complaints Log

- 7.1 A total of 2 complaints have been received in this reporting quarter. Appendix I summaries the complaints received since the Project commencement.
- 7.2 One complaint was reported was raised by a resident living at Garden Villa on 5th May 2003. The complaint was about the construction noise on public holidays at Tai Po Road and construction wastes accumulated on the footpath outside Garden Villa. The Environmental Team (ET) carried out investigation and submitted a complaint investigation report to EPD and ER on 14th May 2003.
- 7.3 Another complaint was received by the Contractor's Hotline on 14th July 2003. It was about the dust pollution generation from the construction works at Temporary Access Road No. 1. ET conducted the site investigation and the complaint investigation report was submitted to ER on 21st July 2003.

8. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- 8.1 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 Complaint Log.

9. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

- 9.1 Excavation works, geotechnical works (soil nail), drainage works and site formation works will be the major construction activities for the coming quarter. The anticipated environmental impact will be mainly on dust and noise due to earthworks as well as potential surface runoff in rainy season.

Table 2.1 Summary of Works Undertaken in the Reporting Months

Item	Work Activity	Month		
		May 03	June 03	July 03
1.	Site clearance works	✓	✓	✓
2.	Site investigation works	-	✓	✓
3.	Excavation works	✓	✓	✓
4.	Ground investigation works	✓	-	-
5.	Bund wall construction	✓	✓	✓
6.	Slope cutting and filling work	✓	✓	✓
7.	Installation of soil nail	✓	✓	✓
8.	Formation of hoarding and fencing	✓	✓	-