


Barbican Construction Co. Ltd.

DSD Contract No. DC/2000/19

**Regulation of Shenzhen River Stage III Phase I
Reprovisioning of Border Road and Fence at Yuen
Leng Chai and Man Kam To**

**Environmental Monitoring and Audit
Quarterly Report
(Version 01)**

December 2003 – January 2004

Verified 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

This is the fifth Environmental Monitoring and Audit (EM&A) Quarterly Summary Report prepared by Cinotech Consultants Limited for the “Regulation of Shenzhen River Stage III Phase I – Re-provisioning of Border Road and Fence at Yuen Leng Chai and Man Kam To” (the Project). This summary report presents EM&A work performed in the period between 26th December 2003 and 25th February 2004.

The construction activities undertaken in the reporting quarter were:-

- Excavation and backfill at fish pond (Portion A);
- Construction of Gabion Slope GS1;
- Construction of Reinforced Fill Wall 1, 2, 3 and 4;
- Construction of Toe Wall TW2;
- Construction of U-channel and catch pits;
- Erection of security fence;
- Construction of Inlet of Box Culvert;
- Construction of Transformer Room; and
- Construction of the retaining wall R1, R2 and R3.

Environmental Monitoring Works

Environmental monitoring for the Project was performed regularly as stipulated in the 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.

Air Quality

1-hour TSP Monitoring

All 1-hour TSP monitoring was conducted as scheduled. On 19th December 2003 and 2nd January 2004, Limit Level exceedances were recorded at Station IM1A, IM2 and IC. Smog was observed by our field staff and Air Pollution Index was ranked as “Very High” at the nearest air monitoring station (Yuen Long) on these days. ET concluded that the exceedances were due to poor ambient air quality over the region. There was no direct evidence showing that the exceedances were due to the construction activities under Contract No. DC/2000/19 and the exceedances were considered to be invalid.

On 25th February 2004, a Limit Level exceedance was recorded at Station IM2 (A village house in Nga Yiu Tsuen). However, open burning by villagers was observed in ET’s site investigation. No direct evidence shows that the exceedance was due to the construction activities under Contract No. DC/2000/19 and the exceedance was considered to be invalid.

24-hour TSP Monitoring

All 24-hour TSP monitoring was conducted as scheduled. A Trigger Level exceedance was recorded at Village House near pumping station (IM1A) on 12th February 2004. Smog was observed by our field staff. Based on information obtained from the EPD, the air pollution index on 12th February 2004 was ranked as “high”. The Trigger Level exceedance may be due to the poor air quality. Therefore, no direct evidence shows that the exceedance was due to the construction activities under Contract No. DC/2000/19 and the exceedance was considered to be invalid.

Construction Noise

All construction noise monitoring was conducted as scheduled. No Action/Limit Level exceedance was recorded during the reporting quarter.

Environmental Complaint and Prosecution

One complaint has been received since the commencement of the Project and no complaint and prosecution was recorded in the reporting period.

Environmental Licensing and Permitting

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

Future Key Issues

Major construction site activities for the coming month which may cause environmental impact include: Fish pond excavation and backfill, construction of U-channel and catch pit, construction of Reinforced Fill Wall, construction of Transformer Room and Erection of security fence. The anticipated environmental impact will be mainly on dust and noise.

1. INTRODUCTION

- 1.1 Cinotech Consultants Limited (hereinafter called the “ET”) was commissioned by Barbican Construction Co., Ltd. (hereinafter called the "Contractor") to undertake the Environmental Monitoring and Audit (EM&A) works for the Project “Shenzhen River Regulation Project Stage III Phase I – Re-provisioning of Border Road and Fence at Yuen Leng Chai and Man Kam To” (the Project).
- 1.2 The scope of the works in the project comprises:-
- Re-provisioning of border road and border fence;
 - Re-construction and re-surfacing of existing border road;
 - Ancillary road and drainage works; and
 - Landscaping works.
- 1.3 The Project is the Phase I of the Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449) and an environmental impact assessment report titled “Shenzhen River Regulation Project Stage III, Environmental Impact Assessment (EIA) Study” (Register No. AEIAR – 035/2000) has been approved and deposited with Environmental Protection Department (EPD). An Environmental Permit (EP) No. EP-078/2000/B has been issued by EPD for the construction of the proposed works under the Project.
- 1.4 Figure 1 shows the layout plan of the Project. The works have been commenced under DSD Contract No. DC/2000/19. Under the requirements of Conditions 5 of the EP, EM&A programme as set out in the EM&A Manual, environmental monitoring of air quality and noise are required for the construction phase of the project.
- 1.5 Barbican Construction Co., Ltd. was awarded for the project as the Contractor. This is the fifth quarterly EM&A report summarizes the impact EM&A works for the Project between 26th December 2003 and 25th February 2004 (25th of each month as the cut-off day).

Project Organization and Contacts of Key Management

- 1.6 An organization structure and the line of communication were set up for the Project between the Engineer/Engineer Representative (ER), the Contractor and Environmental Team (ET). The contact details of the project are shown in Appendix A.

Construction Programme and Synopsis of Work

1.7 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	2003	2004	2004
		December	January	February
1.	Excavation and backfill at fish pond (Portion A)	√	√	
2.	Construction of Gabion Slope GS1	√	√	√
3.	Construction of Reinforced Fill Wall 1, 2, 3 and 4	√	√	√
4.	Construction of Toe Wall TW2	√	√	
5.	Construction of U-channel and catch pits	√	√	√
6.	Erection of security fence	√	√	√
7.	Construction of Inlet of Box Culvert	√	√	√
8.	Construction of Transformer Room	√	√	√
9.	Construction of the retaining wall R1, R2 and R3			√

2. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

2.1 The EM&A Manual designates 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 Figure 1. Appendix B gives details of monitoring requirements.

Monitoring Methodology and Calibration Details

2.2 Monitoring works/equipment 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 (Trigger, Action and Limit Levels)

2.3 The environmental quality performance limits, i.e. Trigger, 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

2.4 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manual for the Contractor to adopt.

3. MONITORING RESULTS

Weather Conditions

- 3.1 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

1-hour TSP

- 3.2 All 1-hour TSP monitoring was conducted as scheduled. On 19th December 2003 and 2nd January 2004, Limit Level exceedances were recorded at Station IM1A, IM2 and IC. Smog was observed by our field staff and Air Pollution Index was ranked as “Very High” at the nearest air monitoring station (Yuen Long) on these days. ET concluded that the exceedances were due to poor ambient air quality over the region. There was no direct evidence showing that the exceedances were due to the construction activities under Contract No. DC/2000/19 and the exceedances were considered to be invalid.
- 3.3 On 25th February 2004, a Limit Level exceedance was recorded at Station IM2 (A village house in Nga Yiu Tsuen). However, open burning by villagers was observed in ET’s site investigation. No direct evidence shows that the exceedance was due to the construction activities under Contract No. DC/2000/19 and the exceedance was considered to be invalid.

24-hour TSP

- 3.4 All 24-hour TSP monitoring was conducted as scheduled. A Trigger Level exceedances was recorded at Village House near pumping station (IM1A) on 12th February 2004. Smog was observed by our field staff. Based on information obtained from the EPD, the air pollution index on 12th February 2004 was ranked as “high”. The Trigger Level exceedance may be due to the poor air quality. Therefore, no direct evidence shows that the exceedance was due to the construction activities under Contract No. DC/2000/19 and the exceedance was considered to be invalid.

Noise

- 3.5 All Construction noise monitoring was conducted as scheduled. No Action/Limit Level exceedance was recorded during the reporting quarter.

4. AUDIT RESULTS

Site Audits

Air Quality

- 4.1 Insufficient watering was observed at the access road on 19th December 2003. Improvements were observed in the follow-up audits.

Noise

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

Water Quality

- 4.3 During the reporting quarter, accumulated sand and silt was occasionally observed inside the wheel washing bay. The contractor was recommended to desilt the wheel washing bay regularly.

Chemical and Waste Management

- 4.4 Accumulated municipal waste was observed occasionally. The Contractor was recommended to provide adequate waste collection facilities.
- 4.5 Oil dripping onto the ground was occasionally observed within the site area. The Contractor was recommended to prevent oil leakage from machinery.
- 4.6 Oil stained soil was observed on the slope near the chemical storage area on 15th January, 13th and 19th February 2004. The Contractor was recommended to collect and store the stained oil properly.
- 4.7 On 21st January and 19th February 2004, oil drum was placed on the bare ground at Portion F, Follow-up site audit will be conducted on 27th February 2004.

Status of Environmental Licensing and Permitting

- 4.8 Environmental licenses and permits including Environmental Permit for the Project, Construction Noise Permit and Waste Disposal (Chemical Waste) License were in place and valid during the reporting quarter. A summary status of licenses and permits is given in Appendix G.

5. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

Summary of Exceedances

- 5.1 On 19th December 2003 and 2nd January 2004, 1-hr TSP Limit Level exceedances were recorded at Station IM1A, IM2 and IC. Smog was observed by our field staff and Air Pollution Index was ranked as “Very High” at the nearest air monitoring station (Yuen Long) on these days. ET concluded that the exceedances were due to poor ambient air quality over the region. There was no direct evidence showing that the exceedances were due to the construction activities under Contract No. DC/2000/19 and the exceedances were considered to be invalid.
- 5.2 On 25th February 2004, a 1-hr TSP Limit Level exceedance was recorded at Station IM2 (A village house in Nga Yiu Tsuen). However, open burning by villagers was observed in ET’s site investigation. No direct evidence shows that the exceedance was due to the construction activities under Contract No. DC/2000/19 and the exceedance was considered to be invalid.
- 5.3 A 24-hr TSP Trigger Level exceedance was recorded at Village House near pumping station (IM1A) on 12th February 2004. Smog was observed by our field staff. Based on information obtained from the EPD, the air pollution index on 12th February 2004 was ranked as “high”. The Trigger Level exceedance may be due to the poor air quality. Therefore, no direct evidence shows that the exceedance was due to the construction activities under Contract No. DC/2000/19 and the exceedance was considered to be invalid.
- 5.4 No exceedance of noise limit level was recorded during the reporting quarter.

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

- 5.5 There were no non-compliances from the site audits in the reporting quarter.

Summary of Actions Taken

- 5.6 In this reporting quarter, the following mitigation measures were implemented:
- Drip trays for storage of oil buckets have been provided;
 - The water spray system of water truck has been improved; and
 - Oil dripping from the drip tray has been rectified.

6. ENVIRONMENTAL COMPLAINTS

Complaints Log

- 6.1 One complaint has been received since the commencement of the Project and no complaint and prosecution was recorded in the reporting period.

7. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- 7.1 No notification of summons and successful prosecutions were recorded during the reporting quarter.

8. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

- 8.1 Fish pond excavation and backfill, construction of U-channel and catch pit, construction of Box Culvert, construction of Drain Pipe, construction of Reinforced Fill Wall, construction of Transformer Room and Erection of security fence were the major construction activities undertaken during the reporting quarter. No significant impact on air quality and noise was identified.