

**Sha Tin New Town, Stage II Road D15 Linking Lok Shun Path and
Tai Po Road (Contract No. ST 77/01)**

**Monthly Environmental Monitoring & Audit Report –
June 2003**

Checked in accordance with EML QP22
Environmental Team Leader

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EXECUTIVE SUMMARY

The impact environmental monitoring report was prepared by Environmental Management Limited (EML) for Environmental Monitoring & Audit (EM&A) Services of Sha Tin New Town, Stage II Road D15 Linking Lok Shun Path and Tai Po Road. This report discusses the EM&A services that had been carried out in June 2003.

Environmental monitoring for this Project included both air quality and noise measurements. The parameters measured for air quality are 24-hour and 1-hour Total Suspended Particulate (TSP) while for noise monitoring, the A-weighted continuous sound pressure level (L_{eq}) as well as percentile levels (L_{10} and L_{90}) were measured.

Over the reporting period, all monitored 24-hour TSP, 1-hour TSP and noise ($L_{eq}(5min)$) monitoring data were below the AL Levels and no remedial actions as listed in the Event and Action Plan (**Appendix G**) were required.

The major construction activities in this reporting period included:

- Construction of Bridge A, B and C, including abutment wall (Bridge A), pre bore H-piles, pile cap and abutment wall (Bridge B and C) and Bridge Decking (Bridge C);
- Retaining wall 2 to 5, 7 and 8;
- Noise barrier construction, including bore piles;
- Box culvert extension, including 1400 box culvert and 1500 pipe;
- Construction of Staircase 2 and 8

Regular site inspection was conducted in this reporting month and the mitigation measures, as discussed in the relevant documents, were assessed.

Further from last month observations, more frequent water spraying was noted in order to prevent fugitive dust emission. Meanwhile, it was noted from site inspections that stagnant water was still observed occasionally on the site. In order to prevent possible outbreak of Dengue disease, the Contractor was instructed to remove or treat any stagnant water immediately. Meanwhile, it was noted that a couple of chemical storage tanks were not properly stored. The Contractor was instructed to properly store these tanks in order to prevent possible land contamination. Furthermore, it was recommended that mitigation measures be implemented when carrying out bore piling activities for the noise barrier in order to minimise the noise impact on surrounding noise sensitive receivers.

1. INTRODUCTION

1.1 Background

Environmental Management Limited (EML) was appointed by Maunsell Consultants Asia Ltd. as the Environmental Specialist for the project *Sha Tin New Town, Stage II Road Linking Lok Shun Path and Tai Po Road* (Contract No. ST 77/01).

The responsibilities of the Environmental Team included:

- Monitor the noise and air quality data as required in the Environmental Monitoring and Audit (EM&A) Manual;
- Analyse the monitoring data and review the success of EM&A program to cost effectively confirm the adequacy of mitigatory measures implemented and validity of the Environmental Impact Assessment Study predictions and to identify any adverse environmental impacts arising;
- Carry out site inspection to investigate and audit the Contractor's site practice, equipment and work methodologies with respect to pollution control and environmental mitigation, and anticipate environmental issues for proactive action before problems arise;
- Review the proposal for mitigation measures submitted by Contractor in accordance with Event and Action Plans;
- Propose any improvement or other alternative mitigation measures should Contractor's proposal be found to be inadequate;
- Adhere to the procedures for carrying out complaint investigation;
- Audit and prepare EM&A reports on environmental monitoring data and site environmental conditions and;
- Report on EM&A results to Engineer, the ER and EPD.

This is the monthly EM&A report for June 2003. This monthly report describes the results of the impact air quality and noise monitoring works in the reporting period as well as the environmental status and issues of Road D15 Construction Site. In addition, if required, any remedial/follow-up actions undertaken as a result of non-compliance with relevant environmental criteria or complaints related to Road D15 Construction Site would also be discussed.

The project area of Road D15 Construction Site is shown in **Figure 1.1**.

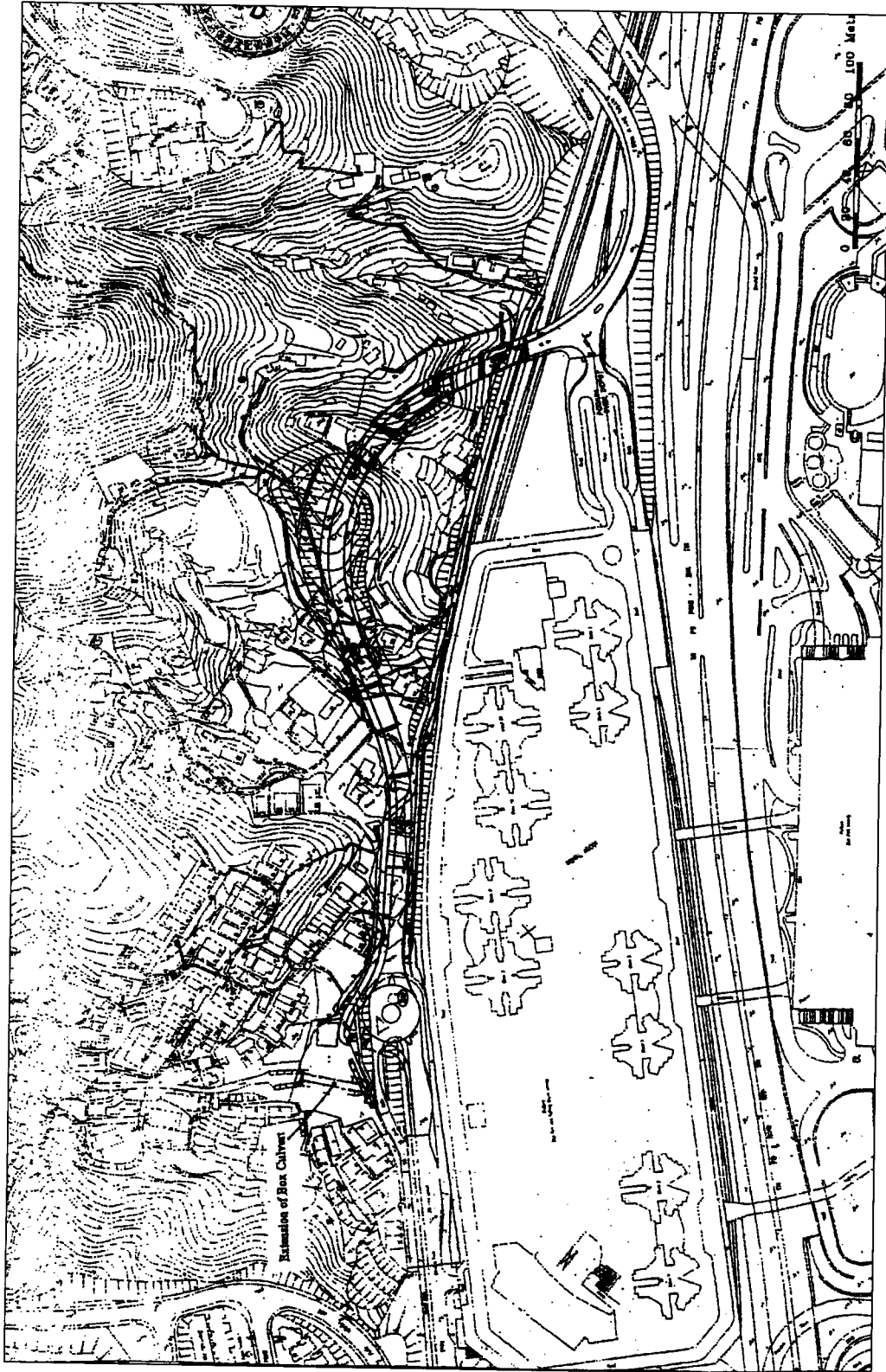


Figure 1.1 Project Area

2. ENVIRONMENTAL STATUS

2.1 Air Quality

2.1.1 Monitoring Requirements

In accordance with the EM&A Manual, air quality impact monitoring was conducted in terms of 1-hour and 24-hour TSP at the designated monitoring locations.

Continuous 24-hour TSP monitoring was performed once in every six days while 1-hour TSP monitoring was performed 3 times in every 6 days. The Action and Limit (AL) levels for air quality is attached in **Appendix A** while the tentative monitoring schedules for the current and next reporting months are attached in **Appendix B**.

2.1.2 Monitoring Locations

The designated impact air quality monitoring stations are listed in **Table 2.1** and are shown in **Figure 2.1**.

Table 2.1 Air Quality Monitoring Locations

Monitoring Station	Location
A1	Village house at Lok Lo Ha Village
A2	Lok Lo Ha Village House No. 104
A3	Village House near Tsun King Road

2.1.3 Summary of Monitoring Results

In this report, the results for the impact air quality monitoring conducted in June 2003 at the three designated locations were evaluated. **Table 2.2** summarises the ranges and mean of the 24-hour and 1-hour TSP monitoring results carried out in the reporting period. Detailed results, including graphical plots and relevant field logs, are presented in **Appendix C** and **D**. Meanwhile, **Appendix F** shows the meteorological conditions during the monitoring days.

Table 2.2 Summary of 24 and 1-hour TSP Monitoring Results

Parameter	Monitoring Location	Mean TSP Levels ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	No. of Exceedance	
				Action Levels	Limit Levels
24 – hour TSP	A1	54.6	48 – 76	0	0
	A2	59.2	45 - 109	0	0
	A3	46.0	40 – 49	0	0
1 – hour TSP	A1	151.3	95 – 342	0	0
	A2	145.4	95 – 267	0	0
	A3	134.9	90 – 321	0	0

As can be seen from the table above, all measured 24-TSP and 1-hour TSP monitoring data were below the criteria as set out in the Action and Limit Levels in **Appendix A**.

Over the reporting period, the local weather conditions during the monitoring were mainly sunny or cloudy, except some precipitations were recorded on 10, 11 and 26 June. From field logs, the major dust sources during samplings near the designated stations included road dusts, vehicle emissions from traffic in Lok Shun Path and construction works at Road D15 Site. The major construction works carried out at Road D15 Site over the reporting period include construction of

Bridge A, B and C, retaining wall, noise barrier, box culvert extension and staircases. Meanwhile, it was also observed that there were construction activities carried out by sites that were not related to this Project in the vicinity of the monitoring stations.

Comparing with the monitoring results from last month, the calculated mean 24-hour and 1-hour TSP levels at all stations were lower in this reporting month. Among these levels, the calculated mean 24-hour TSP at Station A3 showed the largest reduction from 72.5 $\mu\text{g}/\text{m}^3$ recorded last month to 46.0 $\mu\text{g}/\text{m}^3$ in this reporting period.



Figure 2.1 Air Quality Monitoring Locations

2.2 Noise

2.2.1 Monitoring Requirements

Impact noise monitoring was conducted once in every six days at the five designated monitoring locations in accordance with specifications in the EM&A Manual. The duration of sampling was 30 minutes. The Action and Limit levels for noise monitoring are attached in **Appendix A** while the tentative monitoring schedules for the current and next reporting months are attached in **Appendix B**.

2.2.2 Monitoring Locations

The impact noise monitoring locations are presented in **Table 2.3** and shown in **Figure 2.2**.

Table 2.3 Noise Monitoring Locations

Monitoring Location	Measurement	Location
N1	Façade	Lok Lo Ha Village House No. 3B
N2	Façade	Lok Lo Ha Village House No. 32A
N3	Façade	Royal Ascot Block 9, Flat C
N4	Façade	Lok Lo Ha Village House No. 97
N5	Façade	Village near Royal Ascot

2.2.3 Summary of Monitoring Results

In this report, the results for the impact noise monitoring conducted in June 2003 at the five designated locations were evaluated. The monitoring results obtained are summarised in **Table 2.4** below. Detailed results, including graphical plots and relevant field logs, are presented in **Appendix E**. Meanwhile, **Appendix F** shows the meteorological conditions during the monitoring days.

Table 2.4 Summary of Noise Monitoring Results

Parameter	Monitoring Location	Range of Results dB(A)	No. of Exceedance	
			Action Levels	Limit Levels
30-minute Noise Measurement (Leq)	N1	63.7 – 72.3	0	0
	N2	66.0 – 68.9	0	0
	N3	61.3 – 62.7	0	0
	N4	61.3 – 65.2	0	0
	N5	59.3 – 63.9	0	0

As shown in the table above, all noise monitoring data recorded were below the criteria as set out in the Action and Limit Levels in **Appendix A**.

Over the reporting period, the local weather conditions during the sampling were mainly sunny or cloudy except some precipitations were recorded on 11 June, while all monitoring was conducted with wind speed of below 1.9 m/s. Traffic and construction activities were the major noise sources identified at the five monitoring locations. Meanwhile it was noted from field log that activities of hammering, breaking and excavation, as well as operations of crane were present in the vicinity of all stations during the monitoring.

Comparing with the monitoring results recorded in last reporting period, the range of measured noise level during this reporting month at all stations were similar. The highest level was recorded at Station N1 (72.3dB(A)) and occurred in the morning of 11 June. According to the field log, the major noise source at that time was the operation of crane and traffic on KCR.



Figure 2.2 Noise Monitoring Locations

3. ENVIRONMENTAL AUDIT

3.1 General

In the last monthly EM&A report, three environmental issues were raised:

- Remove stagnant water on the site in order to prevent the outbreak of Dengue Fever;
- Implementation of measures to prevent land contamination from chemical contained drums on the site; and
- More frequent water spraying during dry weather to prevent fugitive dust emission

It was noted from site inspections that the frequent water spraying activities had been implemented. Occasionally, stagnant water was observed on the site although it was removed by the Contractor when instructed.

Table 3.1 summarises the date and type of site inspections carried out during the reporting period.

Table 3.1 Summary of Site Inspection during the Reporting Period

Date	Type of Inspection
06 June 2003 (Friday)	Regular Site Inspection
13 June 2003 (Friday)	Regular Site Inspection
24 June 2003 (Tuesday)	Regular Site Inspection

Over the reporting period, the major construction work at the Site include:

- Construction of Bridge A, B and C, including abutment wall (Bridge A), pre bore H-piles, pile cap and abutment wall (Bridge B and C) and Bridge Decking (Bridge C);
- Retaining wall 2 to 5, 7 and 8;
- Noise barrier construction, including bore piles;
- Box culvert extension, including 1400 box culvert and 1500 pipe; and
- Construction of Staircase 2 and 8.

3.2 Assessment of Environmental Monitoring Results

In this reporting month, there were no exceedance recorded for both impact air quality and noise monitoring. The monitoring result was discussed in Section 2 of the report and are summarised in Table 3.2 below.

Table 3.2 Summary of Environmental Monitoring

Item	Parameter	Monitoring Period	Total No. of Samples Taken (on all stations)	No. of Exceedance	
				Action Levels	Limit Levels
1	24 – hour TSP	01/06/03 to 30/06/03	15	0	0
2	1 – hour TSP	01/06/03 to 30/06/03	45	0	0
3	30-minute Noise Measurement (Leq)	01/06/03 to 30/06/03	25	0	0

3.3 Environmental Complaints

No environmental complaints had been received against the construction site in this reporting month. **Table 3.3** shows the summary record for this reporting month while **Table 3.4** summarises the complaint statistics from the commencement of the Project to date. **Appendix I** listed the details of all the complaints received on the construction site.

Table 3.3 Environmental Complaints / Enquiry Received in the Reporting Month

Complaint No.	Received date & Time	Description (inc. location/nature of complaint)	Follow-up Action Taken	Recommended Mitigation Measures	Status/Remarks
N/a	N/a	N/a	N/a	N/a	N/a

Table 3.4 Summary of Total Number of Complaints Received to date

Total No. of Complaints to date	No. of Complaints in this reporting period	No. of Active Complaints	No. of Inactive/Closed Complaints
2	0	N/a	2

3.4 Assessment of Mitigation Measures

Table 3.5 presented the status of the major mitigation measures identified during site inspection.

Table 3.5 Summary of Major Mitigation Measures at the Site

Type	Mitigation Measure	Comments
Noise	Temporary purposed-built Noise Barrier	<ul style="list-style-type: none"> Constructed based on the design in the Construction Noise Mitigation Proposal.
Water	Wheel Washing Facility	<ul style="list-style-type: none"> Installed and in operation.
	Sand/Silt Removal Facilities	<ul style="list-style-type: none"> Wastewater treatment systems are installed to treat site-runoffs and water from piling works Another treatment system was installed to treat wastewater from pilling works near Bridge C.
	Measures along stream-banks north-east of Lok Shun Path Roundabout	<ul style="list-style-type: none"> Concrete, sandbags, sump pits and pumps were placed/installed along the banks to prevent construction debris and site run-off from entering the stream untreated.
	Diversion of Stream Course via drainage pipe	<ul style="list-style-type: none"> Installed at the existing channel.
Wastewater	Water Reuse at wheel washing facility and site investigation drilling works.	Implemented
Land Contamination	Metal trays are placed underneath stationary machines where there are potential of oil leakage	Implemented
Air	Provide plastic sheeting covers on exposed soils	Implemented
	Regular water spraying on areas where there is likely generation of dust	Implemented
	Impervious sheeting was placed around the working area near monitoring station A1	Implemented

It was noted from site inspections that stagnant water was still observed occasionally on the site. In order to prevent possible outbreak of Dengue disease, the Contractor was instructed to remove

or treat any stagnant water immediately. Meanwhile, it was noted that a couple of chemical storage tanks were not properly stored. The Contractor was instructed to properly store these tanks in order to prevent possible land contamination. Furthermore, it was recommended that mitigation measures be implemented when carrying out bore piling activities for the noise barrier in order to minimise the noise impact on surrounding noise sensitive receivers.

4. FUTURE KEY ISSUE AND RECOMMENDATION

There are three environmental issues that will need to be addressed in the next reporting month:

- Occasional stagnant water on the site shall be removed immediately in order to prevent the outbreak of Dengue Fever;
- Properly store chemical tanks in order to prevent possible land contamination; and
- Noise mitigation measures shall be implemented near the bore piling activities near noise barrier in order to minimise the impact on the nearby noise sensitive receivers.

The updated work program for the following months are attached in **Appendix J** while the monitoring tentative schedule for the next reporting month are attached in **Appendix B**.

APPENDIX A:

Action and Limit Levels

Action and Limit Levels for 24-hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
A1	156	260
A2	155	
A3	153	

Action and Limit Levels for 1-hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
A1	371	500
A2	378	
A3	368	

Action / Limit Levels for Construction Noise

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

** to be selected based on Area Sensitivity Rating

Note: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

APPENDIX B:

**Tentative Schedule for Impact
Air Quality and Noise
Monitoring**

1. Tentative Schedule for Current Reporting Month – June 2003

Contract No. ST77/01

Sha Tin New Town, Stage II

Road D15 Linking Lok Shun Path and Tai Po Road

Tentative Time Schedule for Construction Phase Dust Monitoring for June 2003

Jun-03	Day	Start Time	
		24-hr TSP	1-hr TSP
1	Sun	x	x
2	Mon	x	x
3	Tue	10:30	9:00
4	Wed	x	x
5	Thu	x	11:00&14:00
6	Fri	x	x
7	Sat	x	x
8	Sun	x	x
9	Mon	x	x
10	Tue	10:30	9:00
11	Wed	x	11:00&14:00
12	Thu	x	x
13	Fri	x	x
14	Sat	x	x
15	Sun	x	x
16	Mon	10:30	9:00
17	Tue	x	11:00&14:00
18	Wed	x	x
19	Thu	x	x
20	Fri	10:30	9:00
21	Sat	x	x
22	Sun	x	x
23	Mon	x	11:00&14:00
24	Tue	x	x
25	Wed	x	x
26	Thu	10:30	9:00
27	Fri	x	11:00&14:00
28	Sat	x	x
29	Sun	x	x
30	Mon	x	x

Contract No. ST77/01
 Sha Tin New Town, Stage II
 Road D15 Linking Lok Shun Path and Tai Po Road
 Tentative Time Schedule for Construction Phase Noise Monitoring for June 2003

Jun-03	Day	Start Time				
		N1	N2	N3	N4	N5
1	Sun	x	x	x	x	x
2	Mon	x	x	x	x	x
3	Tue	x	x	x	x	x
4	Wed	x	x	x	x	x
5	Thu	14:30	13:30	11:30	10:45	10:00
6	Fri	x	x	x	x	x
7	Sat	x	x	x	x	x
8	Sun	x	x	x	x	x
9	Mon	x	x	x	x	x
10	Tue	x	x	x	x	x
11	Wed	14:30	13:30	11:30	10:45	10:00
12	Thu	x	x	x	x	x
13	Fri	x	x	x	x	x
14	Sat	x	x	x	x	x
15	Sun	x	x	x	x	x
16	Mon	x	x	x	x	x
17	Tue	14:30	13:30	11:30	10:45	10:00
18	Wed	x	x	x	x	x
19	Thu	x	x	x	x	x
20	Fri	x	x	x	x	x
21	Sat	x	x	x	x	x
22	Sun	x	x	x	x	x
23	Mon	14:30	13:30	11:30	10:45	10:00
24	Tue	x	x	x	x	x
25	Wed	x	x	x	x	x
26	Thu	x	x	x	x	x
27	Fri	14:30	13:30	11:30	10:45	10:00
28	Sat	x	x	x	x	x
29	Sun	x	x	x	x	x
30	Mon	x	x	x	x	x

2. Tentative Schedule for Next Reporting Month – July 2003

Contract No. ST77/01

Sha Tin New Town, Stage II

Road D15 Linking Lok Shun Path and Tai Po Road

Tentative Time Schedule for Construction Phase Dust Monitoring for July 2003

Jul-03	Day	Start Time	
		24-hr TSP	1-hr TSP
1	Tue	x	x
2	Wed	10:30	9:00
3	Thu	x	11:00&14:00
4	Fri	x	x
5	Sat	x	x
6	Sun	x	x
7	Mon	x	x
8	Tue	10:30	9:00
9	Wed	x	11:00&14:00
10	Thu	x	x
11	Fri	x	x
12	Sat	x	x
13	Sun	x	x
14	Mon	10:30	9:00
15	Tue	x	11:00&14:00
16	Wed	x	x
17	Thu	x	x
18	Fri	10:30	9:00
19	Sat	x	x
20	Sun	x	x
21	Mon	x	09:00&11:00
22	Tue	x	x
23	Wed	x	x
24	Thu	10:30	9:00
25	Fri	x	11:00&14:00
26	Sat	x	x
27	Sun	x	x
28	Mon	x	x
29	Tue	x	x
30	Wed	10:30	9:00
31	Thu	x	11:00&14:00

Contract No. ST77/01

Sha Tin New Town, Stage II

Road D15 Linking Lok Shun Path and Tai Po Road

Tentative Time Schedule for Construction Phase Noise Monitoring for July 2003

Jul-03	Day	Start Time				
		N1	N2	N3	N4	N5
1	Tue	x	x	x	x	x
2	Wed	x	x	x	x	x
3	Thu	09:50	10:25	13:00	11:00	09:00
4	Fri	x	x	x	x	x
5	Sat	x	x	x	x	x
6	Sun	x	x	x	x	x
7	Mon	x	x	x	x	x
8	Tue	x	x	x	x	x
9	Wed	09:50	10:25	13:00	11:00	09:00
10	Thu	x	x	x	x	x
11	Fri	x	x	x	x	x
12	Sat	x	x	x	x	x
13	Sun	x	x	x	x	x
14	Mon	x	x	x	x	x
15	Tue	09:50	10:25	13:00	11:00	09:00
16	Wed	x	x	x	x	x
17	Thu	x	x	x	x	x
18	Fri	x	x	x	x	x
19	Sat	x	x	x	x	x
20	Sun	x	x	x	x	x
21	Mon	09:50	10:25	13:00	11:00	09:00
22	Tue	x	x	x	x	x
23	Wed	x	x	x	x	x
24	Thu	x	x	x	x	x
25	Fri	09:50	10:25	13:00	11:00	09:00
26	Sat	x	x	x	x	x
27	Sun	x	x	x	x	x
28	Mon	x	x	x	x	x
29	Tue	x	x	x	x	x
30	Wed	x	x	x	x	x
31	Thu	09:50	10:25	13:00	11:00	09:00

APPENDIX C:

**24-Hour TSP Impact
Monitoring Results and Plots**

1. 24-hour TSP Monitoring Results

Monitoring Station A1 (Lok Lo Ha Village House No. 3B)

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m ³)	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
3-Jun-03	2.8682	2.9893	1.11	1.11	11600.14	11624.14	1440	76	Fine
10-Jun-03	2.7449	2.8239	1.11	1.11	11627.14	11651.14	1440	49	Rain
16-Jun-03	2.8371	2.9199	1.11	1.11	11654.14	11678.14	1440	52	Cloudy
20-Jun-03	2.8520	2.9295	1.11	1.11	11681.14	11705.14	1440	48	Cloudy
26-Jun-03	2.8442	2.9206	1.11	1.11	11708.14	11732.14	1440	48	Trace Rain
							Min	48	
							Max	76	
							Average	54.6	

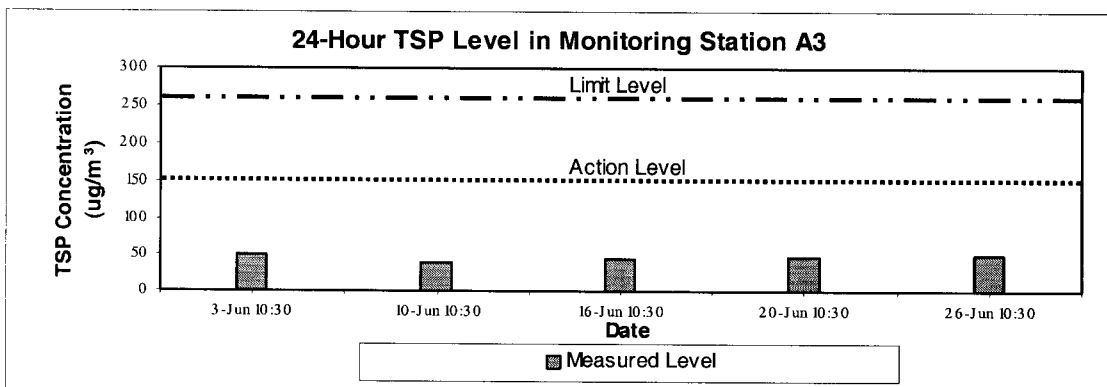
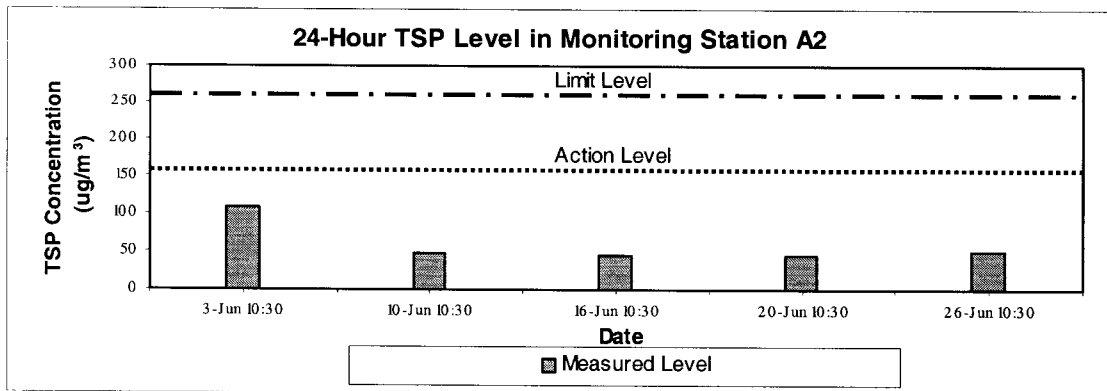
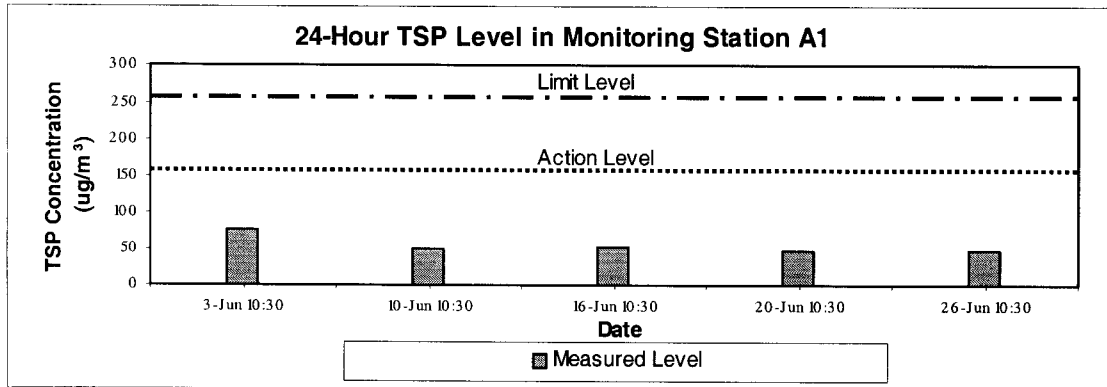
Monitoring Station A2 (Lok Lo Ha Village House No. 104)

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m ³)	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
3-Jun-03	2.8270	3.0013	1.11	1.11	2273.72	2297.72	1440	109	Fine
10-Jun-03	2.8877	2.9633	1.11	1.11	2300.72	2324.72	1440	47	Rain
16-Jun-03	2.8275	2.8992	1.11	1.11	2327.72	2351.72	1440	45	Cloudy
20-Jun-03	2.8490	2.9206	1.11	1.11	2354.72	2378.72	1440	45	Cloudy
26-Jun-03	2.8551	2.9349	1.11	1.11	2331.72	2305.72	1440	50	Trace Rain
							Min	45	
							Max	109	
							Average	59.2	

Monitoring Station A3 (Village House near Tsun King Road)

Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m ³)	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
3-Jun-03	2.8345	2.9133	1.11	1.11	10779.86	10803.86	1440	49	Fine
10-Jun-03	2.8715	2.9359	1.11	1.11	10806.86	10830.86	1440	40	Rain
16-Jun-03	2.8364	2.9078	1.11	1.11	10833.86	10857.86	1440	45	Cloudy
20-Jun-03	2.8138	2.8889	1.11	1.11	10860.86	10884.86	1440	47	Cloudy
26-Jun-03	2.8414	2.9799	1.11	1.11	10887.86	10911.86	1440	49	Trace Rain
							Min	40	
							Max	49	
							Average	46.0	

2. Plots for 24-hour Monitoring Results



APPENDIX D:

**1-Hour TSP Impact
Monitoring Results and Plots**

1. 1-hour TSP Monitoring Results

Station A1 (Lok Lo Ha Village House No. 3B)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
3-Jun-03	0900 – 1000	342
5-Jun-03	1100 – 1200	107
5-Jun-03	1400 – 1500	161
10-Jun-03	0900 – 1000	257
11-Jun-03	1100 – 1200	114
11-Jun-03	1400 – 1500	132
16-Jun-03	0900 – 1000	150
17-Jun-03	1100 – 1200	111
17-Jun-03	1400 – 1500	171
20-Jun-03	0900 – 1000	126
23-Jun-03	1100 – 1200	146
23-Jun-03	1400 – 1500	113
26-Jun-03	0900 – 1000	131
27-Jun-03	1100 – 1200	113
27-Jun-03	1400 – 1500	95
	Average	151.3
	Min	95
	Max	342

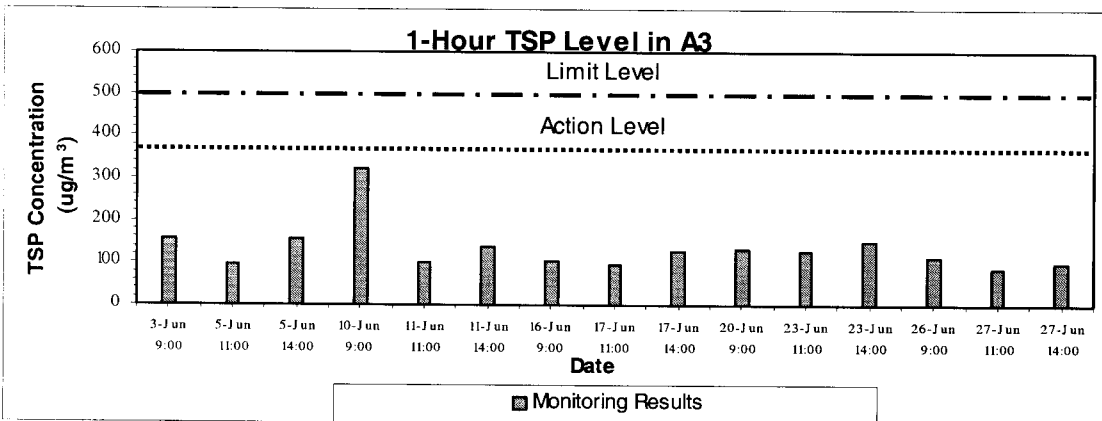
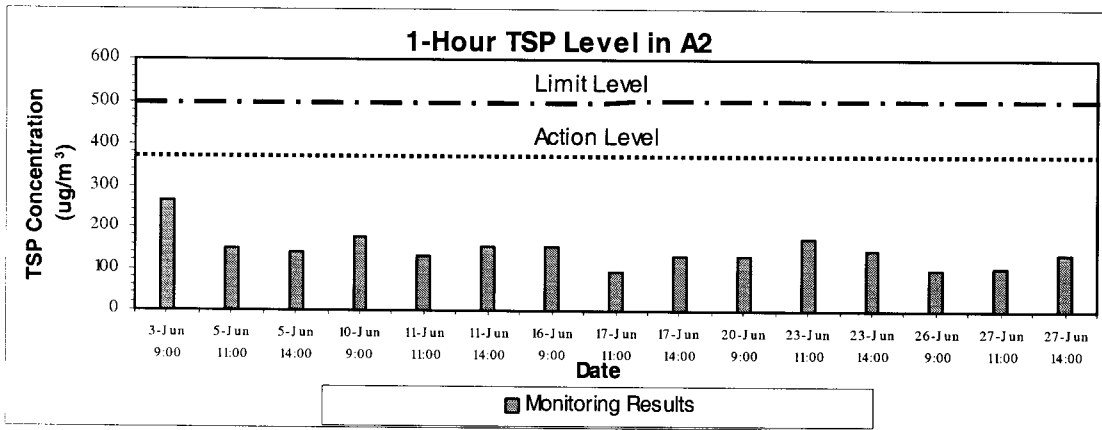
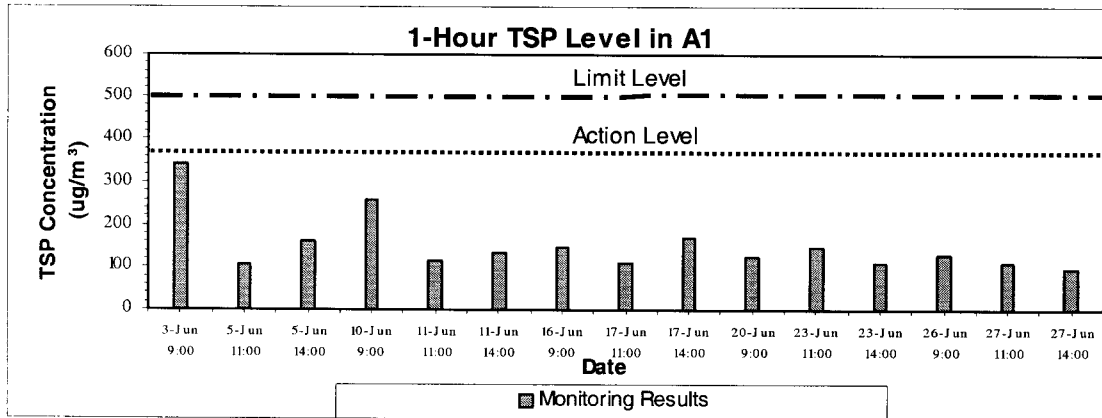
Station A2 (Lok Lo Ha Village House No. 104)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
3-Jun-03	0900 – 1000	267
5-Jun-03	1100 – 1200	150
5-Jun-03	1400 – 1500	141
10-Jun-03	0900 – 1000	176
11-Jun-03	1100 – 1200	128
11-Jun-03	1400 – 1500	155
16-Jun-03	0900 – 1000	155
17-Jun-03	1100 – 1200	95
17-Jun-03	1400 – 1500	129
20-Jun-03	0900 – 1000	128
23-Jun-03	1100 – 1200	174
23-Jun-03	1400 – 1500	146
26-Jun-03	0900 – 1000	99
27-Jun-03	1100 – 1200	104
27-Jun-03	1400 – 1500	134
	Average	145.4
	Min	95
	Max	267

Station A3 (Village House near Tsun King Road)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
3-Jun-03	0900 – 1000	159
5-Jun-03	1100 – 1200	95
5-Jun-03	1400 – 1500	158
10-Jun-03	0900 – 1000	321
11-Jun-03	1100 – 1200	102
11-Jun-03	1400 – 1500	138
16-Jun-03	0900 – 1000	105
17-Jun-03	1100 – 1200	96
17-Jun-03	1400 – 1500	129
20-Jun-03	0900 – 1000	132
23-Jun-03	1100 – 1200	129
23-Jun-03	1400 – 1500	152
26-Jun-03	0900 – 1000	116
27-Jun-03	1100 – 1200	90
27-Jun-03	1400 – 1500	102
	Average	134.9
	Min	90
	Max	321

2. Plots of 1-hour TSP Monitoring Results



APPENDIX E:

**Daytime 07:00 -19:00Hrs
Impact Noise Monitoring
Results and Plots**

1. Noise Monitoring Results

Monitoring Station N1 (Lok Lo Ha Village House No.3B)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L _{eq}	L ₁₀	L ₉₀
5-Jun-03	0941 – 1011	68.2	69.7	65.8
11-Jun-03	0957 – 1027	72.3	73.1	71.5
17-Jun-03	0925 – 0955	63.7	65.7	59.8
23-Jun-03	0950 – 1020	66.7	68.8	60.6
27-Jun-03	1400 – 1430	66.9	69.7	62.4

Min	63.7	65.7	59.8
Max	72.3	73.1	71.5

Monitoring Station N2 (Lok Lo Ha Village House No.32A)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L _{eq}	L ₁₀	L ₉₀
5-Jun-03	1016 – 1046	68.9	72.3	62.5
11-Jun-03	1125 – 1155	66.7	67.9	65.5
17-Jun-03	1000 – 1030	66.0	70.5	61.0
23-Jun-03	1025 – 1055	68.0	70.2	59.1
27-Jun-03	1319 – 1349	68.1	72.9	61.5

Min	66.0	67.9	59.1
Max	68.9	72.9	65.5

Monitoring Station N3 (Royal Ascot Block 9, Flat C)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L _{eq}	L ₁₀	L ₉₀
5-Jun-03	1300 – 1330	61.4	65.1	57.6
11-Jun-03	1325 – 1355	62.6	65.1	59.8
17-Jun-03	1300 – 1330	62.7	65.1	53.8
23-Jun-03	1300 – 1330	62.0	65.2	55.5
27-Jun-03	1125 – 1155	61.3	63.1	54.7

Min	61.3	63.1	53.8
Max	62.7	65.2	59.8

Monitoring Station N4 (Lok Lo Ha Village House No.97)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L _{eq}	L ₁₀	L ₉₀
5-Jun-03	1055 – 1125	65.1	68.9	58.9
11-Jun-03	0915 – 0945	64.2	68.4	60.4
17-Jun-03	1035 – 1105	65.2	67.5	59.8
23-Jun-03	1100 – 1130	61.3	64.0	53.0
27-Jun-03	1035 – 1105	61.4	63.8	55.2

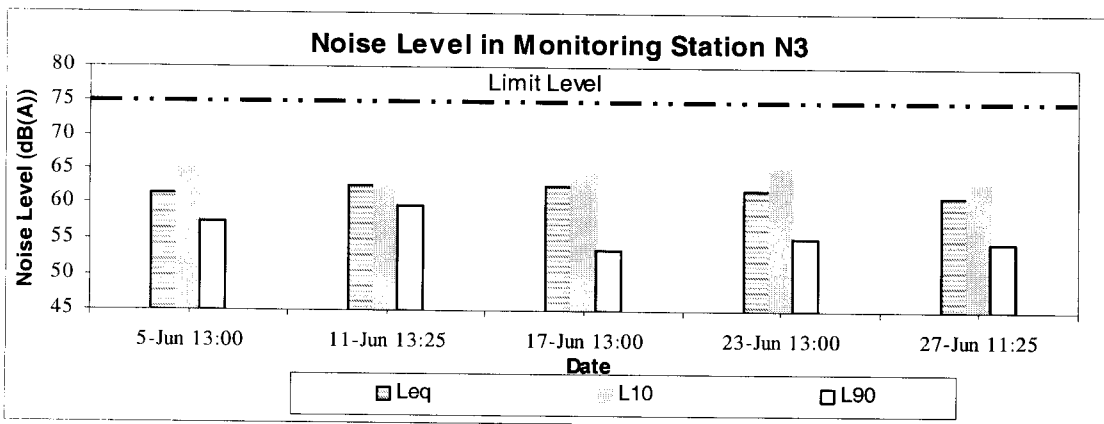
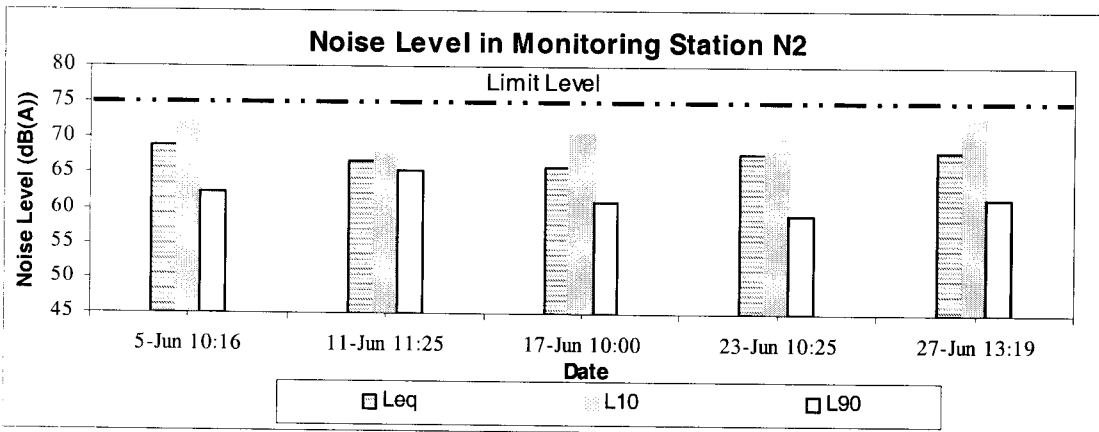
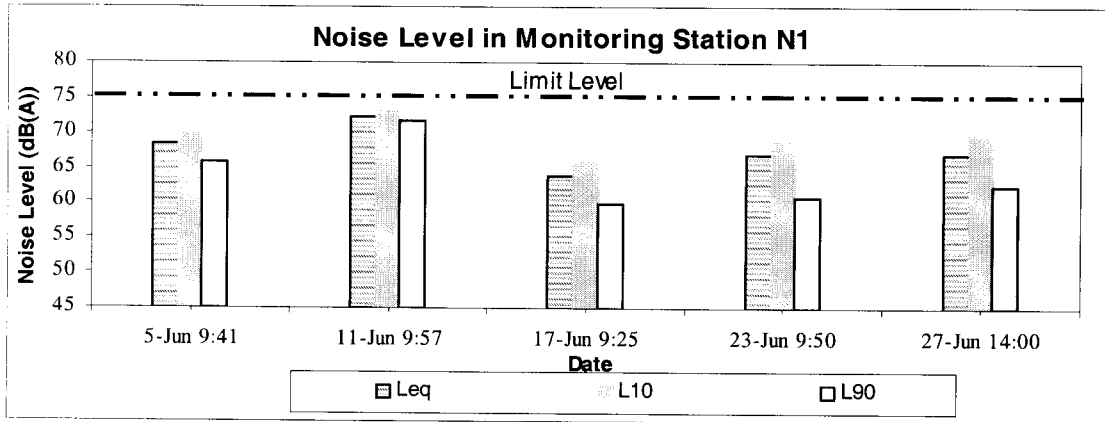
Min 61.3 63.8 53.0
 Max 65.2 68.9 60.4

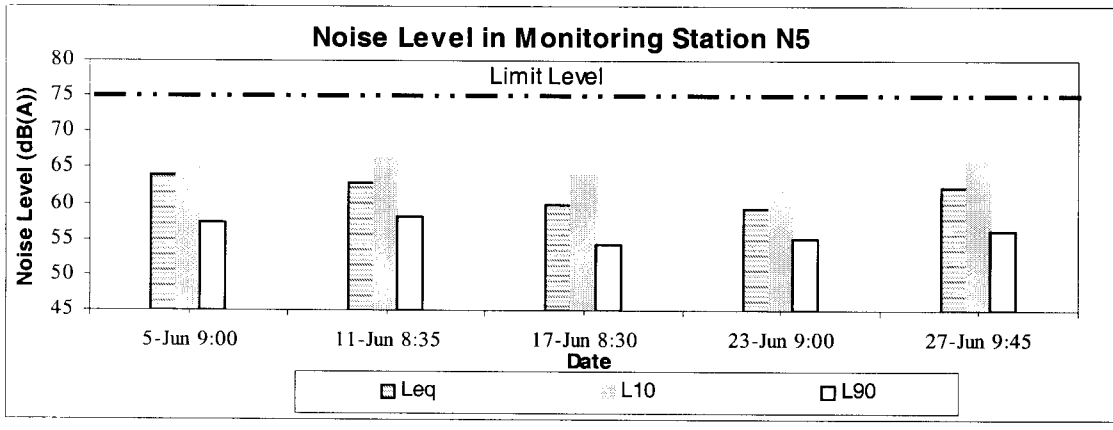
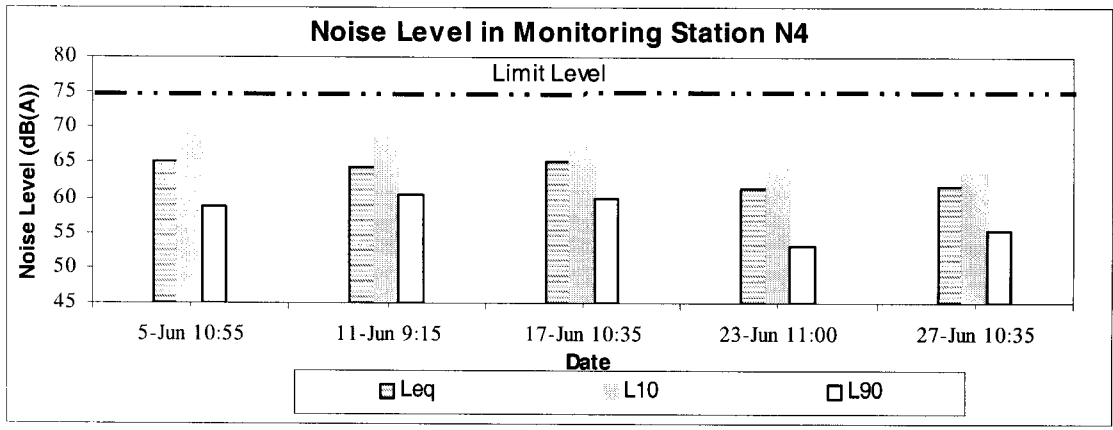
Monitoring Station N5 (Village House near Royal Ascot)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L _{eq}	L ₁₀	L ₉₀
5-Jun-03	0900 – 0930	63.9	67.8	57.5
11-Jun-03	0835 – 0905	63.0	66.3	58.3
17-Jun-03	0830 – 0900	59.8	64.0	54.4
23-Jun-03	0900 – 0930	59.3	63.3	55.1
27-Jun-03	0945 – 1015	62.3	65.9	56.3

Min 59.3 63.3 54.4
 Max 63.9 67.8 58.3

2. Plots of Noise Monitoring Results





APPENDIX F:

**Weather Conditions During
Monitoring Periods**

**Weather Condition during Monitoring Period
(From 1 to 30 June 2003)**

Date	Weather	Mean Air Temperature (°C)	Wind Speed (m/s)	Mean Relative Humidity (%)
3-Jun-03	Fine	27.4	0.7 – 1.0	68
5-Jun-03	Fine	27.7	0.7	78
10-Jun-03	Very light rain	25.9	0.2 – 0.9	95
11-Jun-03	Very light rain	25.7	0.8 – 0.9	91
16-Jun-03	Cloudy	25.2	0.6 – 1.0	93
17-Jun-03	Cloudy	27.0	1.0	68
20-Jun-03	Cloudy	28.2	0.5	86
23-Jun-03	Fine	28.9	0.7	79
26-Jun-03	Very light rain	29.6	0.7 – 1.0	79
27-Jun-03	Cloudy	29.5	1.0	78

APPENDIX G:

**Event and Action Plan for Air
Quality and Noise**

Event / Action Plan for Air Quality

EVENT	ACTION		
	ET	Engineer	CONTRACTOR
ACTION LEVEL			
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm finding; and 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Notify Contractor; and 2. Check monitoring data and Contractor's working methods. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice, if any; and 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily. 5. Discuss with Engineer for remedial actions required; 6. If exceedance continues, arrange meeting with the engineer; and 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Check monitoring data and Contractor's working methods; 4. Discuss with ET and Contractor on potential remedial actions; and 5. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for mitigation measures to the Engineer within 3 working days of notification; 2. Implement the agreed proposals; and 3. Amend proposal if appropriate.
LIMIT LEVEL			
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep EPD and the Engineer informed of results. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Check monitoring data and Contractor's working methods; 4. Discuss with ET and Contractor on potential remedial actions; and 5. Ensure remedial action properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to the Engineer within 3 working days of notification; 3. Implement the agreed proposals; and 4. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily. 5. Investigate the causes of exceedance; 6. Arrange meeting with EPD and the Engineer to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep EPD and the Engineer informed of the results; and 8. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 4. Discuss among ET and Contractor on potential remedial actions; 5. Review Contractor's remedial action whenever necessary to assure their effectiveness; and 6. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to the Engineer within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the Engineer until the exceedance is abated.

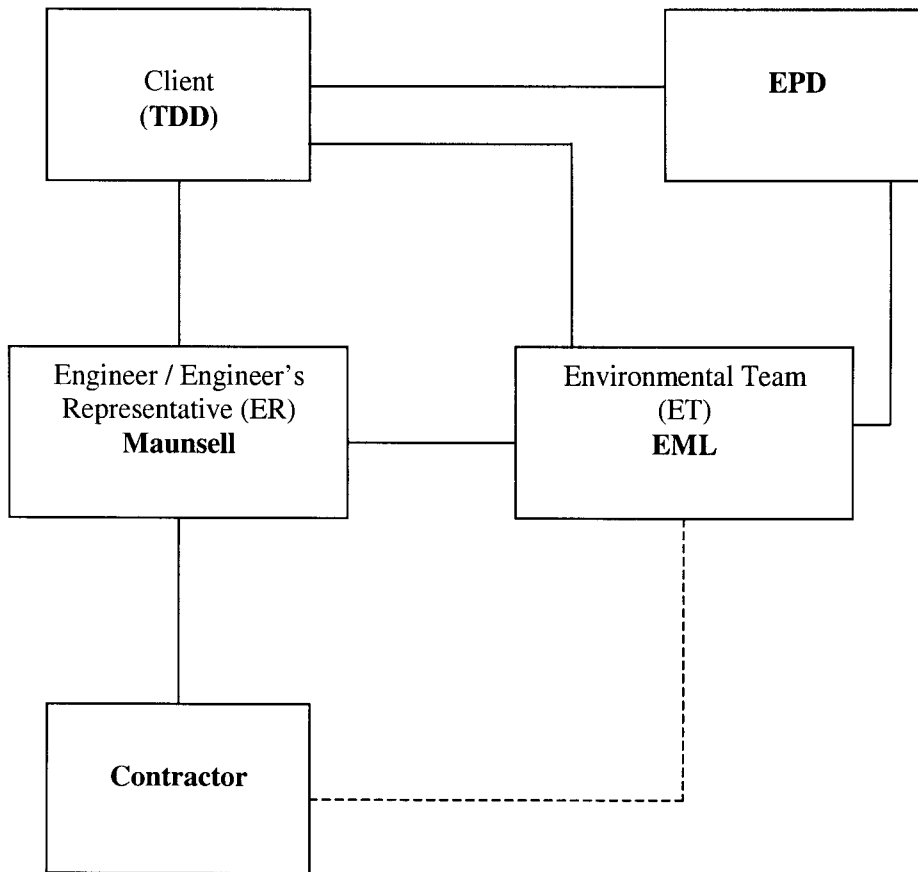
Event / Action Plan for Construction Noise

EVENT	ACTION	
	ET	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify the Engineer and Contractor; 2. Analyze investigation; 3. Require Contractor to propose measures for the analyzed noise problem; and 4. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to Environmental Team and the Engineer; and 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Notify the Engineer and Contractor; 2. Notify EPD; and 3. Require Contractor to implement mitigation measures; and increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Implement mitigation measures; and 2. Prove to Environmental Team and the Engineer effectiveness of measures applied.

APPENDIX H:

**Project Organisation and
Contacts of Key Personnel**

Figure H.1: Project Management Structure



Contacts of Key Personnel:

Organisation	Nature of Duty	Contact Personnel	Contact Number	
			Telephone	Fax
Territory Development Department (TDD)	Client	Mr. Stephen Wong	2301-1376	2721-8630
Maunsell Consultants Asia Ltd. (MCAL)	Engineer	Mr. Alan Kwong	2602-3433	2691-2649
Environmental Management Ltd. (EML)	Environmental Team	Mr. Lawrence Tso	2890-1090	2890-6901

APPENDIX I:

**Summary Records of
Complaints Received**

Complaint No.	Received date & Time	Description (inc. location/ nature of complaint)	Follow-up Action Taken	Recommended Measures	Mitigation	Status/ Remarks
C02-N1	Morning, 29/7/2002	<p>Around 9:30am on 29/7/02, police came on site to investigate a complaint of noise pollution emitted during rock breaking which carried out by the Contractor near the Site Office (near the box culvert and north Lok Shun Path Roundabout). The Contractor immediately halted the activity in response to police's advice</p>	<ul style="list-style-type: none"> Ad hoc site inspection was carried out on 31/7/02, jointly with the Engineer and Contractor The complaint log sheet, the investigation findings and recommendations on mitigation measures were submitted to the Engineer and Contractor. A letter, addressing to the complainant, will be sent to the police. 	<p>Mitigation actions:</p> <ul style="list-style-type: none"> Excavator-mounted breaker shall not be carried out within 125m from any nearby noise sensitive receivers and; Temporary purposed built barrier should be installed whenever there are high noise level construction activities. 	<p>The complaint was considered as ad hoc rather than continuous. It is therefore considered not necessary to increase the noise monitoring frequency</p> <p>File Closed.</p>	
C02-N2	Night-time, 7 August, 2002	<ul style="list-style-type: none"> Nearby residents complained to police that a generator in Road D15 Site was operating in night-time near Lok Lo Ha Village. Police came to the site to investigate the complaint and inform watchmen to turn off the operating generator at around 8:30pm. The complaint was valid as it concerned with construction noise during the restricted hours. 	<ul style="list-style-type: none"> Ad hoc site inspection was carried out on 8 August 02, jointly with the Engineer and Contractor and ET. The complaint log sheet, the investigation findings and recommendations on mitigation measures were submitted to the Engineer and Contractor. A letter in both English and Chinese, addressing to the complainant, has been sent to the police. 	<p>Mitigation actions:</p> <ul style="list-style-type: none"> Under the Noise Control Ordinance, the carrying out of general construction work using powered mechanical equipment (including generators) during the restricted hours (between 7 p.m. and 7 a.m. or at any time on a general holiday (including Sunday) is prohibited unless a valid Construction Noise Permit is in force; A watchmen or site staff should be employed to check daily that all generators and plats are switched off after the permissible working hours. 	<p>File Closed.</p>	

APPENDIX J:

**Updated Construction
Program**

MASTER PROGRAMME (ST77/01/MP/10)
 Sha Tin New Town Stage II Contract No. ST77/01, Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	05 '03	06 '03	07 '03	08 '03
0	Road D15 Construction Programme	113 days	Wed 12/12/01				
1	1.1 Works in Section I (345 days)	345 days	Wed 12/12/01				
2	1.2 Works in Section IA (475 Days)	475 days	Wed 12/12/01				
3	1.2 Works in Section IB (622 days)	822 days	Wed 12/12/01				
4	1.3 Landscape Work in Section III (1187 Days)	1187 days	Wed 12/12/01				
5	2.1 Section I Extension of Time	249.5 days	Fri 22/11/02				29/07/2003
6	2.1 Section IA Extension of Time	0 days	Mon 31/03/03				
7	2.1 Section II Extension of Time	162 days	Sat 19/03/04				
8	2.1 Section III Extension of Time	162 days	Sun 19/03/05				
9	3 Preliminary & Site Establishment	650 days	Wed 12/12/01				
10	3.1 Waste Mgt & Envir Control Manual for EPD approval	600 days	Wed 12/12/01				
11	3.2 Submission of mitigation proposal	600 days	Wed 12/12/01				
12	3.3 Method Statement/ICE/Material Submission & Approval	600 days	Wed 12/12/01				
13	3.4 Site clearance including existing asbestos houses at Bridge A	57 days	Wed 12/12/01				
14	3.5 Site clearance including existing houses of Bridge C	61 days	Sat 23/02/02				
15	3.6 Utilities undertakers Co-ordination	650 days	Wed 12/12/01				
16	3.8 Fabrication / Erection of RE Office	90 days	Wed 12/12/01				
17	3.9 Condition Survey / Defect Survey	60 days	Wed 12/12/01				
18	3.10 Erection of Fencing & Hoarding	414 days	Wed 12/12/01				07/05/2003
19	3.10.1 Site Hoarding and Fence	60 days	Wed 12/12/01				
20	3.10.2 Relocation of extg fence at House 658	79 days	Tue 10/09/02				
21	3.10.3 Reprovision of Extg KCR Fence	40 days	Mon 17/03/03				07/05/2003
22	3.12 Form Temporary Site Access	151 days	Tue 18/03/02				
23	3.12.1 Form Bridge A to Bridge B	45 days	Tue 19/03/02				
24	3.12.2 Form Bridge B to Bridge C	18 days	Mon 17/06/02				
25	3.12.3 Form Bridge A to C2	40 days	Sat 03/08/02				
26	4 Earthworks	445 days	Thu 13/06/02				
27	4.1 Forming access to Main Cutting CH 300-400	50 days	Thu 13/06/02				
28	4.2 Slope Work (Drainage At CH 300-400	59 days	Sat 25/01/03				
29	4.3 Forming access to CH 400-500	19 days	Mon 24/06/02				
30	4.4 Remaining Slope Cutting at RW7 & CH300	20 days	Sat 04/10/03				
31	4.5 Remove Temporary Access road to RW7	8 days	Thu 27/11/03				
32	5 Entrustment Works (Section I & IA)	384 days	Tue 15/01/02				15/05/2003
33	5.1 Section 1	393 days	Tue 15/01/02				14/05/2003
34	5.1.1 General Clearance & Trial Pile Excavation	27 days	Tue 15/01/02				
35	5.1.2 Drainage Works (1.019-1.024, 7.022 & 15.000)	114 days	Tue 16/04/02				
36	5.1.3 Drainage Works (pipelines 1.024-1.026)	280 days	Wed 05/06/02				
37	5.1.4 Drainage Works (pipeline 1.011-1.013)	70 days	Wed 05/06/02				
38	5.1.5 Drainage Works (pipeline 1.014-1.016)	150 days	Tue 21/05/02				
39	5.1.6 Drainage Works (1.000-1.004, 2.000-2.001, 3.000-3.001, 3.0)	120 days	Sat 29/06/02				
40	5.2 Section 1A	40 days	Mon 24/03/03				15/05/2003
41	5.2.1 Drainage Works (pipeline 3.002-3.004)	40 days	Mon 24/03/03				15/05/2003
42	6 Bridge A & General	787 days	Wed 12/12/01				
43	6.1 Design Submission of Alternative Design (I Beam)	180 days	Wed 12/12/01				
44	6.2 Procurement, manufacturing and testing of bridge bearing	63.2 days	Tue 14/05/02				
45	6.3 Engineer's Approval of Off Site Casting Yard	180 days	Mon 04/02/02				
46	6.4 Fabrication precast beams	150 days	Wed 13/11/02				19/05/2003
47	6.5 Fabrication PC panel permanent formwork	100 days	Fri 24/01/03				29/05/2003
48	6.6 Ground Investigation	62 days	Fri 17/05/02				
49	6.7 Piling Works at A1 to A5	76 days	Fri 10/05/02				
50	6.7.1 A1 Piling Work	52 days	Fri 10/05/02				
51	6.7.2 A2 Piling Work	45 days	Sat 18/05/02				
52	6.7.3 A3 Piling Work	34 days	Fri 28/06/02				
53	6.7.4 A4 Piling Work	26 days	Fri 21/06/02				
54	6.7.5 A5 Piling Work	35 days	Sat 29/06/02				
55	6.8 Pile Caps Construction A1 to A5	304 days	Sat 19/10/02				
56	6.8.1 A1 Pile Cap	50 days	Thu 13/02/03				
57	6.8.2 A2 Pile Cap	24 days	Thu 12/12/02				

Date: 1/4/2003

Task Progress:

MASTER PROGRAMME (ST77/01/MP/10)
 Sha Tin New Town Stage II Contract No. ST77/01 - Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	05/03	06/03	07/03	08/03
58	6.8.3 A3 Pile Cap	22 days	Sat 19/10/02				
59	6.8.4 A4 Pile Cap	24 days	Fri 25/10/02				
60	6.8.5 A5 Pile Cap	182 days	Mon 17/03/03				
61	6.8.5.1 A5 Pile Cap (1st Portion)	60 days	Mon 17/03/03				31/05/2003
62	6.8.5.2 A5 Pile Cap (2nd Portion)	50 days	Wed 27/08/03				6.8.5.2 A5 Pile Cap (2nd Portion)
63	6.9 Abutment Wall A1 to A5	310 days	Fri 29/11/02				
64	6.9.1 A1 Abutment Wall	200 days	Mon 14/04/03				
65	6.9.1.2 A1 (1st portion to allow site access to C2)	30 days	Mon 14/04/03				23/05/2003
66	6.9.1.2 A1 (2nd Portion After Bridge C Beams Completed)	30 days	Sat 08/11/03				
67	6.9.2 A2 Pier & Cross Head	212 days	Wed 29/01/03				
68	6.9.2.1 Pier only to allow access to C2	22 days	Wed 29/01/03				
69	6.9.2.2 A2 Crosshead	24 days	Thu 18/09/03				
70	6.9.3 A3 Pier & Cross Head	30 days	Fri 29/11/02				
71	6.9.4 A4 Pier & Cross Head	12 days	Thu 02/01/03				
72	6.9.5 A5 Abutment Wall	182 days	Mon 02/06/03				
73	6.9.5.1 A5 Abutment wall (Portion 1 to allow site access)	60 days	Mon 02/06/03				6.9.5 A5 Abutment Wall 12/08/2003
74	6.9.5.2 A5 Abutment wall (Portion 2)	40 days	Mon 27/10/03				
75	6.10 Install bridge bearings A1 to A5	276 days	Thu 23/01/03				
76	6.10.1 A1 - A2 Bridge Bearings	6 days	Wed 17/12/03				
77	6.10.2 A2 - A3 Bridge Bearings	6 days	Tue 21/10/03				
78	6.10.3 A3 - A4 Bridge Bearings	6 days	Thu 23/01/03				
79	6.10.4 A4 - A5 Bridge Bearings	6 days	Tue 15/12/03				
80	6.11 Install Precast Beams A1 to A5	330 days	Fri 14/02/03				
81	6.11.1 A1 to A2 PC Beams	6 days	Tue 30/12/03				
82	6.11.2 A2 to A3 PC Beams	6 days	Fri 31/10/03				
83	6.11.3 A3 to A4 PC Beams	3 days	Fri 14/02/03				
84	6.11.4 A4 to A5 PC Beams	6 days	Wed 17/03/04				
85	6.12 Bridge Deck Construction A1 to A5	368 days	Mon 24/02/03				
86	6.12.1 A1 to A2 Bridge Deck	40 days	Wed 07/01/04				
87	6.12.2 A2 to A3 Bridge Deck	40 days	Mon 10/11/03				
88	6.12.3 A3 to A4 Bridge Deck	60 days	Mon 24/02/03				16/05/2003
89	6.12.4 A4 to A5 Bridge Deck	40 days	Thu 25/03/04				
90	6.13 Bridge Deck Drainage	83 days	Wed 17/03/04				
91	6.13.1 A1 to A2 Drainage Pipe, M/H cover & Gully	18 days	Wed 17/03/04				
92	6.13.2 A2 to A3 Drainage Pipe, M/H cover & Gully	18 days	Mon 12/04/04				
93	6.13.3 A3 to A4 Drainage Pipe, M/H cover & Gully	18 days	Thu 05/05/04				
94	6.13.4 A4 to A5 Drainage Pipe, M/H cover & Gully	18 days	Fri 04/05/04				
95	6.14 Bridge deck Parapet & Curb	103 days	Thu 01/04/04				
96	6.14.1 A1 to A2 Parapet & Curb	24 days	Thu 01/04/04				
97	6.14.2 A2 to A3 Parapet & Curb	24 days	Wed 05/05/04				
98	6.14.3 A3 to A4 Parapet & Curb	24 days	Tue 08/06/04				
99	6.14.4 A4 to A5 Parapet & Curb	20 days	Mon 12/07/04				
100	7 BRIDGE B	509 days	Wed 11/09/02				
101	7.1 Ground Investigation	36 days	Wed 11/09/02				
102	7.2 Pre Bore H-Piles	182 days	Fri 13/12/02				
103	7.3.1 B1 H Piles	29 days	Fri 13/12/02				
104	7.3.2 B2 H Piles	36 days	Fri 27/06/03				08/08/2003
105	7.3 Pile Cap & Abutment Wall B1 & B2	101 days	Thu 05/06/03				
106	7.4.1 B1 Pile Cap & Abutment	50 days	Thu 05/06/03				02/04/2003
107	7.4.2 B2 Pile Cap & Abutment	40 days	Sat 16/08/03				7.4.2 B2 Pile Cap & Abutment
108	7.4 Install Bridge Bearings	57 days	Thu 07/08/03				
109	7.4.1 B1 bridge Bearings	6 days	Thu 07/08/03				7.4.1 B1 bridge Bearings
110	7.4.2 B2 Bridge Bearings	6 days	Wed 08/10/03				13/08/2003
111	7.5 Install Precast Beams B1 to B2	6 days	Sat 13/12/03				
112	7.6 Bridge Deck Construction B1 to B2	40 days	Sat 20/12/03				
113	7.7 Bridge deck Drainage B1 to B2	18 days	Thu 12/02/04				
114	7.8 Bridge Deck Parapet & Curb B1 to B2	16 days	Thu 11/03/04				
115	7.9 Remove Temp Platform(Underneath Bridge Deck)	60 days	Sat 04/10/03				

Date: 1/4/2003

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MASTER PROGRAMME (ST77/01/MP/10)
 Sha Tin New Town Stage II Contract No. ST77/01 - Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	05 '03	06 '03	07 '03	08 '03
116	7.10 Reinstate E/Mg Valley	60 days	Tue 19/03/04				
117	8 Bridge C	504 days	Thu 01/06/02				
118	8.1 Ground Investigation	62 days	Thu 01/08/02				
119	8.2 Pre Bore H Piles	174 days	Mon 18/11/02				21/06/2003
120	8.2.1 C1 H Piles	36 days	Sat 10/05/03				21/06/2003
121	8.2.2 C2 H Piles	52 days	Mon 18/11/02				
122	8.3 Pile Cap & Abutment Wall C1 & C2	148 days	Tue 25/02/03				26/06/2003
123	8.3.1 C1 Pile Cap & Abutment Wall	55 days	Mon 23/06/03				26/06/2003
124	8.3.2 C2 Pile Cap & Pier	50 days	Tue 25/02/03				
125	8.4 Install Bridge Bearings	327.8 days	Fri 02/08/02				
126	8.4.1 C1 Bridge Bearings	6 days	Sat 30/08/03				8.4.1 C1 Bridge Bearings
127	8.4.2 C2 Bridge Bearings	6 days	Sat 03/05/03				
128	8.4.3 C3 Bridge Bearings	6 days	Fri 02/08/02				
129	8.5 Install Precast Beams B1 to B2	98 days	Fri 23/05/03				
130	8.5.1 C1 to C2 PC Beams	6 days	Wed 10/09/03				10/05/2003
131	8.5.2 C2 to C3 PC Beams	6 days	Fri 23/05/03				8.5.2 C2 to C3 PC Beams 29/05/2003
132	8.6 Bridge Deck Construction C1 to C3	132 days	Fri 30/05/03				
133	8.6.1 C1 to C2 Bridge Deck	40 days	Thu 19/09/03				17/07/2003
134	8.6.2 C2 to C3 Bridge Deck	40 days	Fri 30/05/03				
135	8.7 Bridge deck Drainage C1 to C3	56 days	Wed 05/11/03				
136	8.7.1 C1 to C2 Drainage Pipe, M/H cover & Gully	18 days	Wed 05/11/03				
137	8.7.2 C2 to C3 Drainage Pipe, M/H cover & Gully	18 days	Wed 26/11/03				
138	8.8 Bridge Deck Parapet & Curb C1 to C3	76 days	Wed 03/12/03				
139	8.8.1 C1 to C2 Parapet & Curb	36 days	Wed 03/12/03				
140	8.8.2 C2 to C3 Parapet & Curb	40 days	Sat 17/01/04				
141	8.9 Bridge A, B & C Movement Joint Installation	90 days	Wed 17/12/03				
142	9 Road works, Pavement & Cycle Track	295 days	Tue 26/06/03				
143	9.1 Drainage to on Grade Road	75 days	Fri 12/03/04				
144	9.2 Utilities at on Grade Road	75 days	Wed 21/04/04				
145	9.3 Carriage way Wearing Course	6 days	Sat 07/08/04				
146	9.4 Road Marking & road furniture	6 days	Sat 14/08/04				
147	9.5 Foot path	150 days	Wed 18/02/04				
148	9.6 Cycle Track	90 days	Thu 05/05/04				
149	9.7 Light Poles	150 days	Tue 26/08/03				9.7 Light Poles
150	9.8 Road Work Finishings	120 days	Thu 26/02/04				
151	10 Resaining Walls	691 days	Wed 12/12/01				
152	10.1 RW1	90 days	Wed 13/08/03				10.1 RW1
153	10.1.1 RW1 Bay 1	40 days	Wed 13/08/03				10.1.1 RW1 Bay 1
154	10.1.2 RW1 Bay 2	40 days	Wed 27/08/03				10.1.2 RW1 Bay 2
155	10.1.3 RW1 Bay 3	40 days	Wed 10/09/03				
156	10.1.4 RW1 Bay 4	30 days	Thu 25/09/03				
157	10.1.5 RW1 Bay 5	30 days	Fri 10/10/03				
158	10.1.6 RW1 Bay 6	30 days	Fri 24/10/03				
159	10.2 RW2	217 days	Sat 10/05/03				
160	10.2.1 RW2 Bay 1	40 days	Fri 07/11/03				
161	10.2.2 RW2 Bay 2	40 days	Fri 21/11/03				
162	10.2.3 RW2 Bay 3	40 days	Fri 05/12/03				
163	10.2.4 RW2 Bay 4	30 days	Fri 19/12/03				
164	10.2.5 RW2 Bay 5	30 days	Sat 10/05/03				10.2.5 RW2 Bay 5 14/06/2003
165	10.2.6 RW2 Bay 6	30 days	Sat 24/05/03				10.2.6 RW2 Bay 6 26/06/2003
166	10.2.7 RW2 Bay 7	30 days	Mon 30/06/03				10.2.7 RW2 Bay 7 26/06/2003
167	10.3 RW3	185 days	Mon 18/12/02				
168	10.3.1 RW3 Bay 4	30 days	Tue 03/06/03				10.3.1 RW3 Bay 4 08/07/2003
169	10.3.2 RW3 Bay 5	50 days	Fri 14/03/03				17/05/2003
170	10.3.3 RW3 Bay 6	120 days	Mon 16/12/02				16/05/2003
171	10.3.4 RW3 Bay 7	120 days	Mon 16/12/02				16/05/2003
172	10.3.5 RW3 Bay 8	40 days	Mon 16/06/03				10.3.5 RW3 Bay 8 01/08/2003
173	10.3.6 Dwarf Wall	40 days	Tue 17/06/03				10.3.6 Dwarf Wall 02/08/2003

Date: 1/4/2003

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MASTER PROGRAMME (ST77/01/MP/10)
 Sha Tin New Town Stage II Contract No. ST77/01 - Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	05 '03	06 '03	07 '03	08 '03
290	14.8 Stair 8 (Level +39)	100 days	Thu 05/06/03				
291	14.9 Stair 9 (CH300)	12 days	Mon 15/03/04				
292	14.10 Stair 10 (RW12)	18 days	Wed 31/12/03				
293	14.11 Stair 11 (Abutment A5)	12 days	Wed 13/08/03				
294	14.12 Stair 12 (House 102)	6 days	Fri 13/08/04				
295	14.13 Stair 13 (Slope CH350 - 400)	18 days	Tue 28/01/03				
296	15 Standard Refuse Collection Point	60 days	Wed 25/02/04				
297	16 Rain Shelter no.1&2	60 days	Mon 01/03/04				
298	17 Landscaping	103 days	Wed 14/01/04				
299	17.1 Tree Planting	60 days	Mon 08/03/04				
300	17.2 Turfing	30 days	Wed 14/01/04				
301	18 Project Completion & Handover	694 days	Wed 14/05/03				
302	18.1 Section I Completion	0 days	Wed 14/05/03	14/05/2003			
303	18.2 Section IA Completion	0 days	Thu 15/05/03	15/05/2003			
304	18.3 Section II Completion	0 days	Sat 21/08/04				
305	18.4 Section III Completion	0 days	Mon 12/09/05				

14.8 Stair 8 (Level +39) 14.11 Stair 11 (Abutment A5) 26/08/20

18 Project Completion & Handover
 18.1 Section I Completion
 18.2 Section IA Completion

Date: 1/4/2003

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Task Progress:

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Rolled Up Critical Task:

Rolled Up Milestone:

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