

**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 –  
July 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 July 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 pile caps & abutment walls (Bridge A, B and C), H piles (Bridge B and C), and bridge decks (Bridge C);
- Retaining wall, 1, 3, 7 and 8;
- Noise barrier construction, including bore piles coring test & bore piles for noise barrier No 1;
- Box culvert extension, including 1400 box culvert and 1500 pipe;
- Underground drainage and utilities near Lok Shun Path Roundabout;
- 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, chemical tanks had been properly stored on the sites. Meanwhile, it was noted from site inspections that stagnant water was still observed occasionally on the site. The Contractor was instructed to remove or treat any stagnant water immediately in order to prevent possible outbreak of Dengue disease. In addition, it was noted that some construction wastes were left near Retaining Wall 3 area and the Contractor was asked to transfer the wastes to the designated area within the site and properly dispose the wastes in order to improve the site tidiness and cleanliness.

## 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 July 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**.

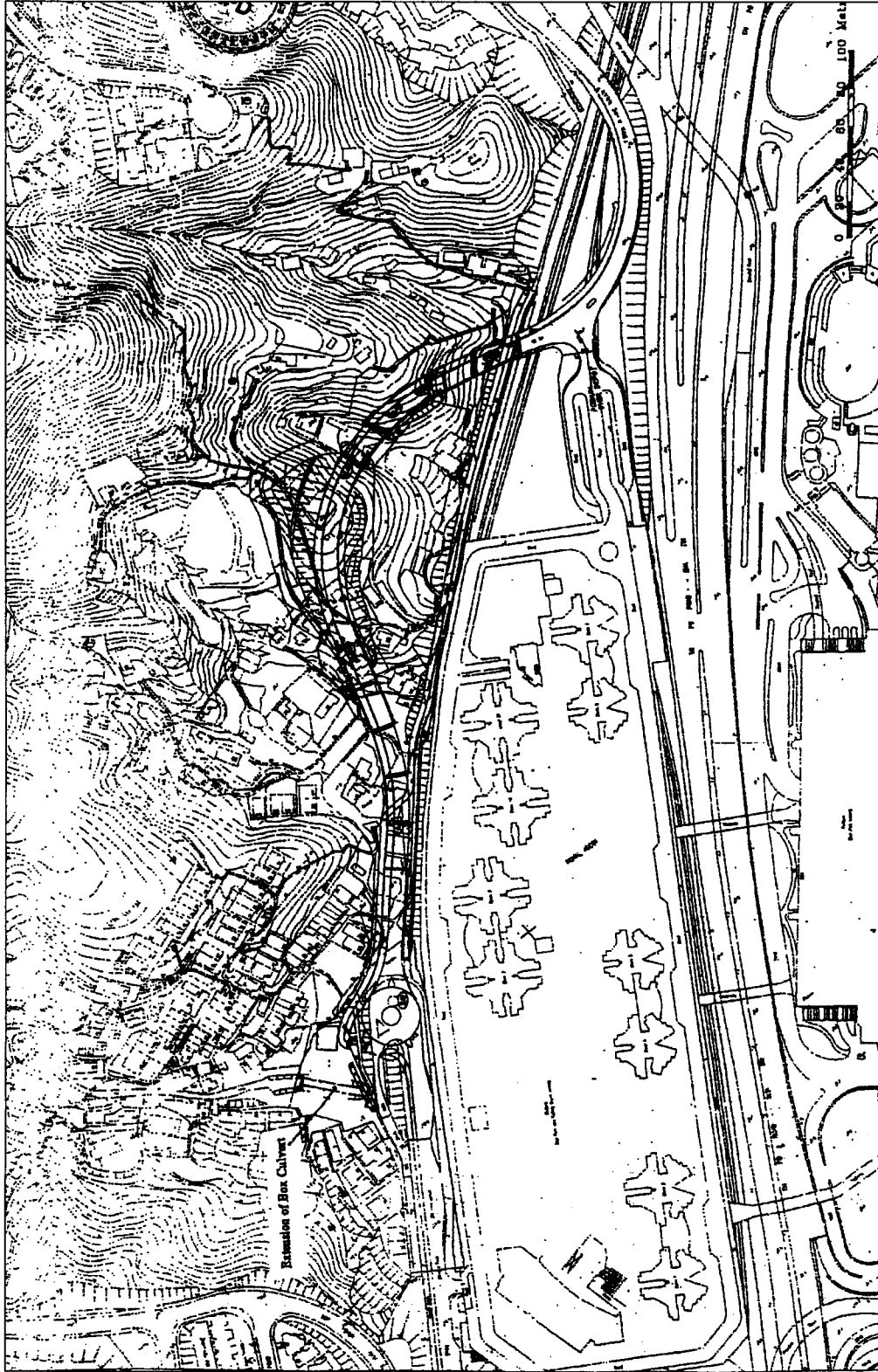


Figure 1.1 Project Area

## 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 July 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	52.3	40 – 74	0	0
	A2	49.8	45 – 54	0	0
	A3	45.8	41 – 49	0	0
1 – hour TSP	A1	137.5	92 – 266	0	0
	A2	148.6	105 – 263	0	0
	A3	130.4	90 – 231	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 24 July. 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 walls, noise barrier, box culvert extension, underground drainage and utilities and construction of staircase. 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 generally lower in this reporting month except the mean 1-hour TSP at Station A2. The mean 1-hour TSP at Station A2 was  $148.6\mu\text{g}/\text{m}^3$  in this reporting period, which was slightly higher than  $145.4\mu\text{g}/\text{m}^3$  recorded in June.



**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 July 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	64.4 – 70.0	0	0
	N2	59.8 – 72.5	0	0
	N3	59.6 – 61.9	0	0
	N4	57.9 – 62.9	0	0
	N5	59.6 – 67.1	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 24 July, while all monitoring was conducted with wind speed of below 2.3m/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 cutting, hammering, breaking and excavating, as well as operations of crane and dump truck 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 N2 (72.5dB(A)) and occurred in the morning of 21 July. According to the field log, the major noise source at that time was cutting operations 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:

- Occasional observations of stagnant water on the site;
- Possible land contamination caused by improper storage of chemical tanks; and
- Implementation of noise mitigation measures near bore piling activities in order to minimise the impact on the nearby noise sensitive receivers.

It was noted from site inspections that noise mitigation measures near the bore piling activities had been properly installed and the chemical tanks had been properly stored. However, stagnant water was observed on the site in some occasion and the Contractor was instructed to immediately remove them.

**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
04 July 2003 (Friday)	Regular Site Inspection
18 July 2003 (Friday)	Regular Site Inspection
28 July 2003 (Monday)	Regular Site Inspection

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

- Construction of Bridge A, B and C, including pile caps & abutment walls (Bridge A, B and C), H piles (Bridge B and C), and bridge decks (Bridge C);
- Retaining wall, 1, 3, 7 and 8;
- Noise barrier construction, including bore piles coring test & bore piles for noise barrier No 1;
- Box culvert extension, including 1400 box culvert and 1500 pipe;
- Underground drainage and utilities near Lok Shun Path Roundabout;
- 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	01/07/03 to 31/07/03	18	0	0
2	1 – hour TSP	01/07/03 to 31/07/03	54	0	0
3	30-minute Noise Measurement (Leq)	01/07/03 to 31/07/03	30	0	0

### 3.3 Environmental Complaints

No environmental complaints had been received by the Environmental Team 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"> <li>Constructed based on the design in the Construction Noise Mitigation Proposal.</li> </ul>
Water	Wheel Washing Facility	<ul style="list-style-type: none"> <li>Installed and in operation.</li> </ul>
	Sand/Silt Removal Facilities	<ul style="list-style-type: none"> <li>Wastewater treatment systems are installed to treat site-runoffs and water from piling works</li> <li>Another treatment system was installed to treat wastewater from piling works near Bridge C.</li> </ul>
	Measures along stream-banks north-east of Lok Shun Path Roundabout	<ul style="list-style-type: none"> <li>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.</li> </ul>
	Diversion of Stream Course via drainage pipe	<ul style="list-style-type: none"> <li>Installed at the existing channel.</li> </ul>
Wastewater	Water Reuse at wheel washing facility and site investigation drilling works.	Implemented

Type	Mitigation Measure	Comments
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 observed occasionally on the site. The Contractor was instructed to remove or treat any stagnant water immediately in order to prevent possible outbreak of Dengue disease. In addition, it was noted that some construction wastes were left near Retaining Wall 3 area and the Contractor was asked to transfer the wastes to the designated area within the site and properly dispose the wastes in order to improve the site tidiness and cleanliness.

#### 4. FUTURE KEY ISSUE AND RECOMMENDATION

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

- Stagnant water on the site shall be removed immediately in order to prevent the outbreak of Dengue Fever;
- Waste should be properly stored and disposed of in order to improve the tidiness and cleanliness of the site.

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**.

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**APPENDIX A:**

**Action and Limit Levels**

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**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.

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**APPENDIX B:**

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

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**1. Tentative Schedule for Current 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

## 2. Tentative Schedule for Next Reporting Month – August 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 Aug 2003

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

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

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**APPENDIX C:**

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

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### 1. 24-hour TSP Monitoring Results

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

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m <sup>3</sup> )	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
2-Jul-03	2.8181	2.8852	1.11	1.11	11735.14	11759.14	1440	42	Sunny
8-Jul-03	2.8529	2.9172	1.11	1.11	11762.14	11786.14	1440	40	Sunny
14-Jul-03	2.8598	2.9489	1.11	1.11	11789.14	11813.14	1440	56	Sunny
18-Jul-03	2.8494	2.9674	1.11	1.11	11816.14	11840.14	1440	74	Sunny
24-Jul-03	2.8233	2.9036	1.11	1.11	11843.14	11867.14	1440	50	Trace Rain
30-Jul-03	2.8141	2.8978	1.11	1.11	11870.14	11894.14	1440	52	Sunny
							Min	40	
							Max	74	
							Average	52.3	

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

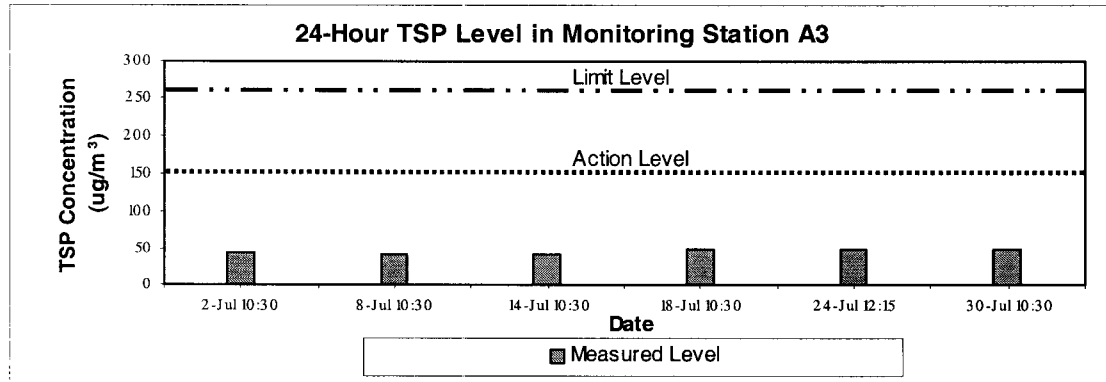
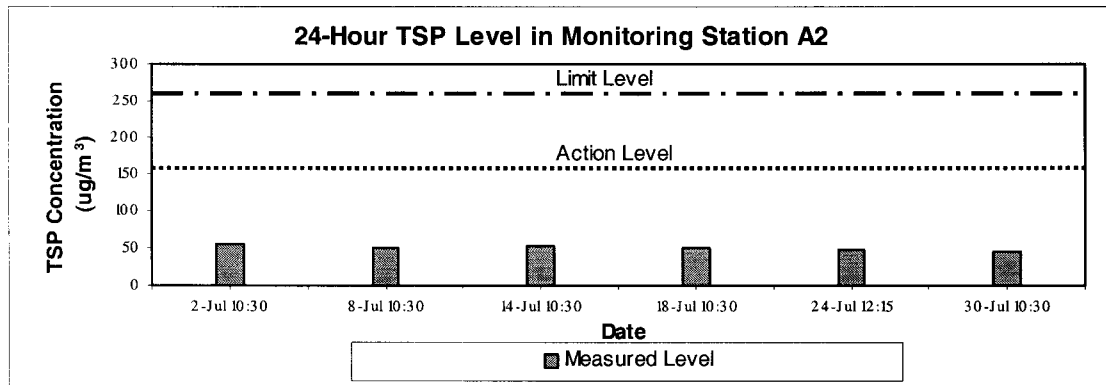
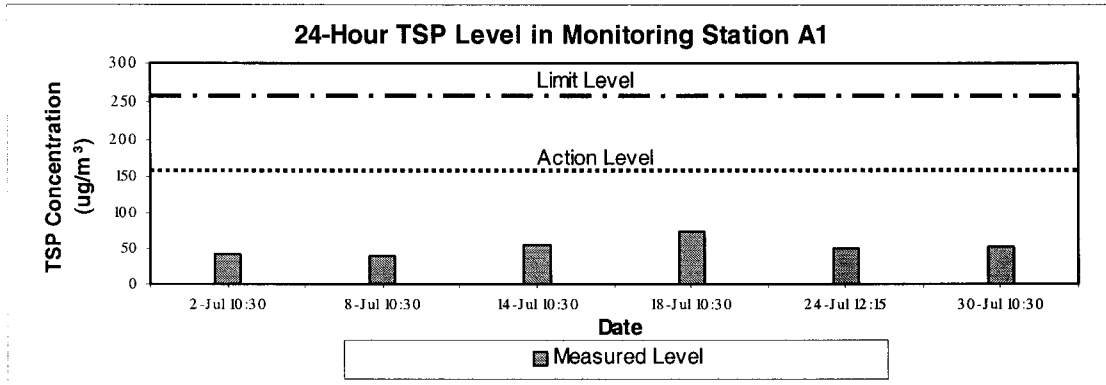
Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m <sup>3</sup> )	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
2-Jul-03	2.7955	2.8824	1.11	1.11	2408.72	2432.72	1440	54	Sunny
8-Jul-03	2.8194	2.8998	1.11	1.11	2435.72	2459.72	1440	50	Sunny
14-Jul-03	2.8416	2.9255	1.11	1.11	2462.72	2486.72	1440	52	Sunny
18-Jul-03	2.8284	2.9093	1.11	1.11	2489.72	2513.72	1440	51	Sunny
24-Jul-03	2.8515	2.9259	1.11	1.11	2516.72	2540.72	1440	47	Trace Rain
30-Jul-03	2.7935	2.8653	1.11	1.11	2543.72	2567.72	1440	45	Sunny
							Min	45	
							Max	54	
							Average	49.8	



**Monitoring Station A3 (Village House near Tsun King Road)**

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m <sup>3</sup> )	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
2-Jul-03	2.8224	2.8935	1.11	1.11	10914.86	10938.86	1440	44	Sunny
8-Jul-03	2.8306	2.8964	1.11	1.11	10941.86	10965.86	1440	41	Sunny
14-Jul-03	2.8243	2.8934	1.11	1.11	10968.86	10992.86	1440	43	Sunny
18-Jul-03	2.8489	2.9280	1.11	1.11	10795.86	11019.86	1440	49	Sunny
24-Jul-03	2.8502	2.9279	1.11	1.11	11022.86	11046.86	1440	49	Trace Rain
30-Jul-03	2.7910	2.8686	1.11	1.11	11049.86	11073.86	1440	49	Sunny
							Min	41	
							Max	49	
							Average	45.8	

## 2. Plots for 24-hour Monitoring Results



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**APPENDIX D:**

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

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## 1. 1-hour TSP Monitoring Results

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

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
2-Jul-03	0900 – 1000	144
3-Jul-03	1100 – 1200	116
3-Jul-03	1400 – 1500	96
8-Jul-03	0900 – 1000	101
9-Jul-03	1100 – 1200	92
9-Jul-03	1400 – 1500	111
14-Jul-03	0900 – 1000	110
15-Jul-03	1100 – 1200	156
15-Jul-03	1400 – 1500	132
18-Jul-03	0900 – 1000	191
21-Jul-03	0900 – 1000	119
21-Jul-03	1100 – 1200	167
24-Jul-03	1100 – 1200	266
25-Jul-03	1241 – 1341	182
25-Jul-03	1425 – 1525	108
30-Jul-03	0900 – 1000	168
31-Jul-03	1100 – 1200	117
31-Jul-03	1400 – 1500	99
	Average	137.5
	Min	92
	Max	266

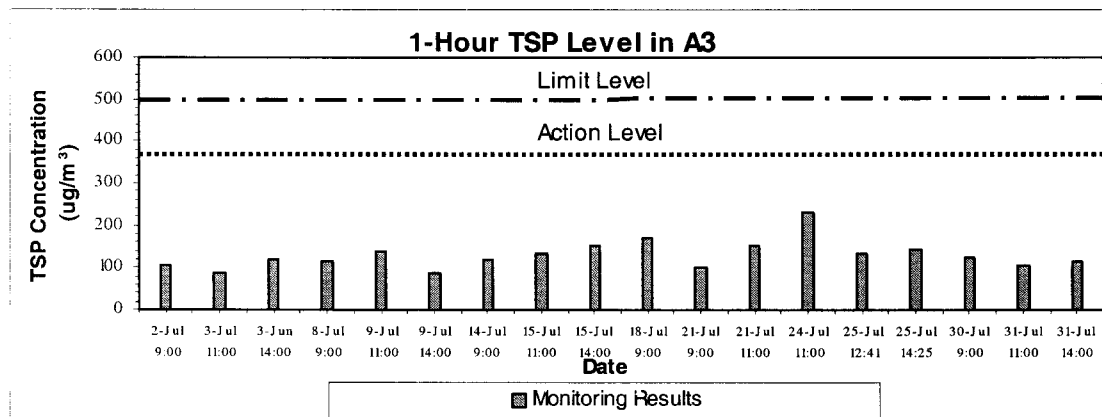
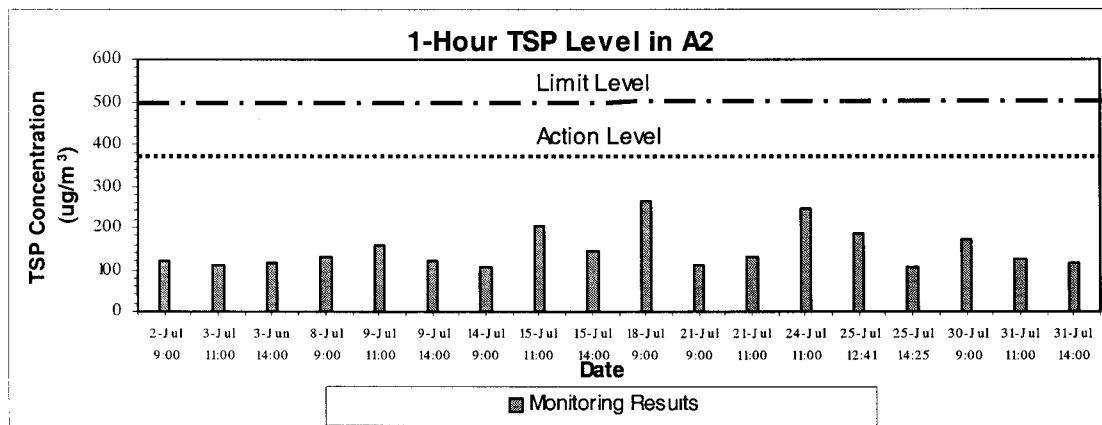
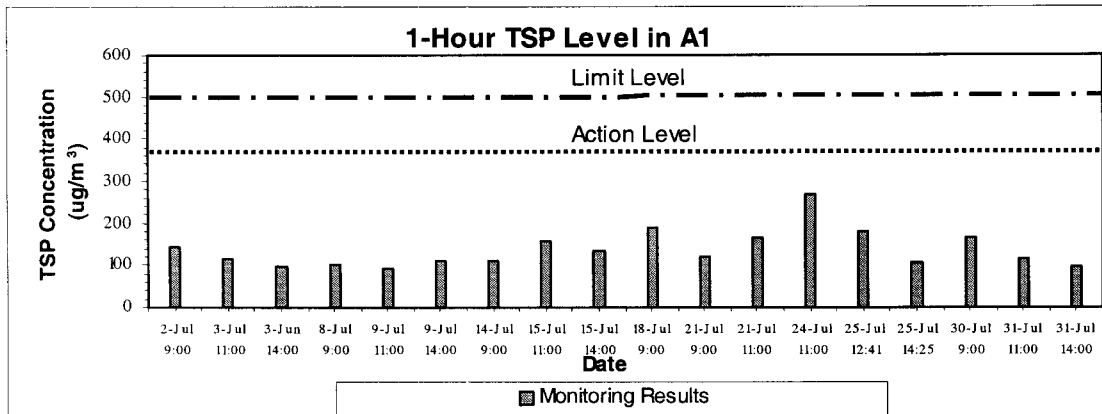
### Station A2 (Lok Lo Ha Village House No. 104)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
2-Jul-03	0900 – 1000	120
3-Jul-03	1100 – 1200	111
3-Jul-03	1400 – 1500	116
8-Jul-03	0900 – 1000	131
9-Jul-03	1100 – 1200	158
9-Jul-03	1400 – 1500	123
14-Jul-03	0900 – 1000	107
15-Jul-03	1100 – 1200	206
15-Jul-03	1400 – 1500	143
18-Jul-03	0900 – 1000	263
21-Jul-03	0900 – 1000	113
21-Jul-03	1100 – 1200	132
24-Jul-03	1100 – 1200	248
25-Jul-03	1241 – 1341	186
25-Jul-03	1425 – 1525	105
30-Jul-03	0900 – 1000	170
31-Jul-03	1100 – 1200	126
31-Jul-03	1400 – 1500	116
	Average	148.6
	Min	105
	Max	263

**Station A3 (Village House near Tsun King Road)**

<b>Date</b>	<b>Time of sampling</b>	<b>Concentration, <math>\mu\text{g}/\text{m}^3</math></b>
2-Jul-03	0900 – 1000	108
3-Jul-03	1100 – 1200	90
3-Jul-03	1400 – 1500	120
8-Jul-03	0900 – 1000	116
9-Jul-03	1100 – 1200	140
9-Jul-03	1400 – 1500	90
14-Jul-03	0900 – 1000	119
15-Jul-03	1100 – 1200	132
15-Jul-03	1400 – 1500	152
18-Jul-03	0900 – 1000	173
21-Jul-03	0900 – 1000	101
21-Jul-03	1100 – 1200	152
24-Jul-03	1100 – 1200	231
25-Jul-03	1241 – 1341	135
25-Jul-03	1425 – 1525	141
30-Jul-03	0900 – 1000	125
31-Jul-03	1100 – 1200	108
31-Jul-03	1400 – 1500	114
	Average	130.4
	Min	90
	Max	231

## 2. Plots of 1-hour TSP Monitoring Results



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**APPENDIX E:**

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

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## 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 <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
3-Jul-03	0950 – 1020	66.2	68.1	63.1
9-Jul-03	0918 – 0948	69.4	70.7	67.5
15-Jul-03	0953 – 1023	64.4	66.2	62.4
21-Jul-03	0925 – 0955	64.6	68.1	59.9
25-Jul-03	1342 – 1412	70.0	71.8	66.3
31-Jul-03	0910 – 0940	69.2	70.7	64.1

Min	64.4	66.2	59.9
Max	70.0	71.8	67.5

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

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
3-Jul-03	1025 – 1055	65.0	68.7	59.8
9-Jul-03	1000 – 1030	72.4	75.0	66.6
15-Jul-03	1029 – 1059	68.5	72.9	59.9
21-Jul-03	1001 – 1031	72.5	75.8	62.6
25-Jul-03	1520 – 1550	59.8	62.1	55.0
31-Jul-03	1100 – 1130	65.7	69.5	60.0

Min	59.8	62.1	55.0
Max	72.5	75.8	66.6

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

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
3-Jul-03	1300 – 1330	60.6	62.1	58.5
9-Jul-03	1300 – 1330	61.4	64.7	54.1
15-Jul-03	0830 – 0900	60.9	64.9	54.5
21-Jul-03	1300 – 1330	59.6	61.7	56.5
25-Jul-03	1601 – 1631	60.0	64.0	62.0
31-Jul-03	1300 – 1330	61.9	63.6	59.2

Min	59.6	61.7	54.1
Max	61.9	64.9	62.0



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

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
3-Jul-03	1100 – 1130	60.3	63.6	56.2
9-Jul-03	1035 – 1105	62.9	66.1	56.1
15-Jul-03	0915 – 0945	60.4	62.7	56.3
21-Jul-03	1045– 1115	61.2	63.7	56.4
25-Jul-03	1440 – 1510	58.8	61.8	54.8
31-Jul-03	1000 – 1030	57.9	60.6	54.6

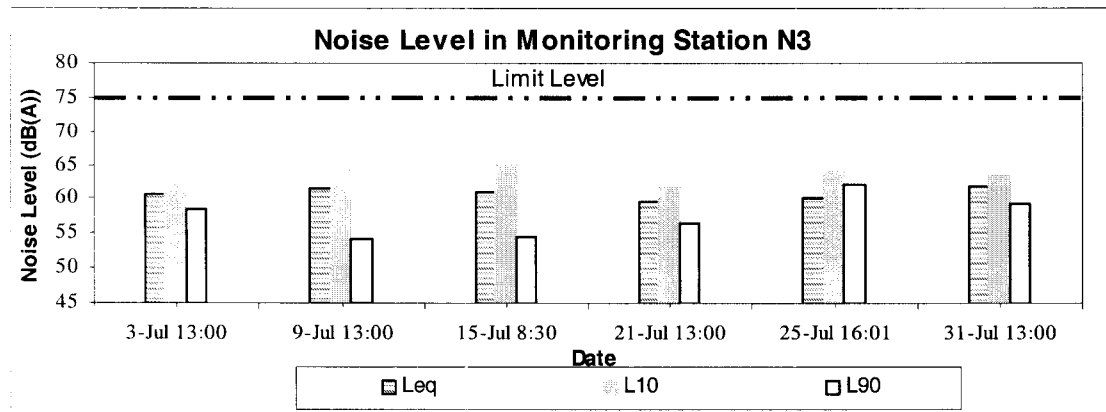
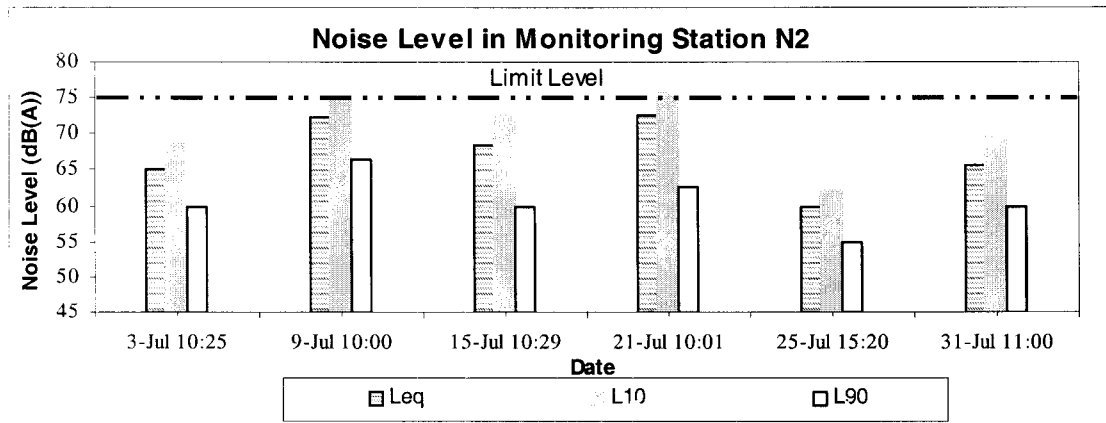
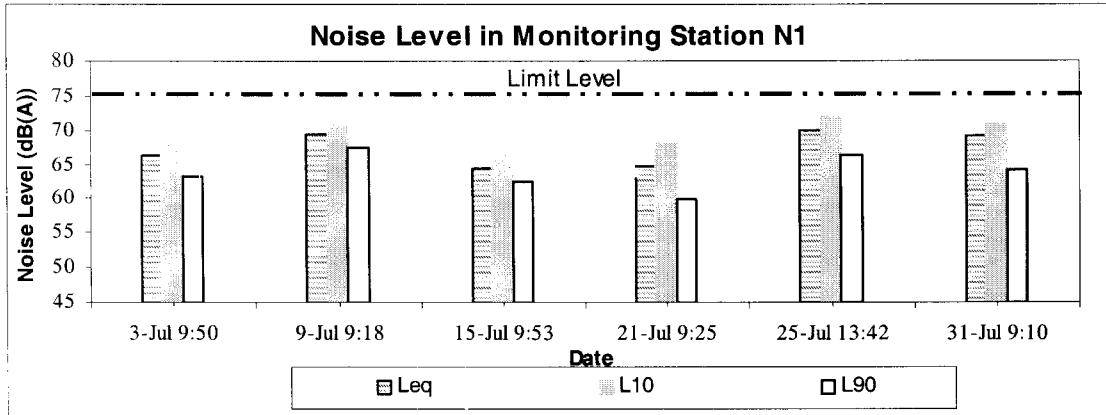
Min                    57.9                    60.6                    54.6  
 Max                    62.9                    66.1                    56.4

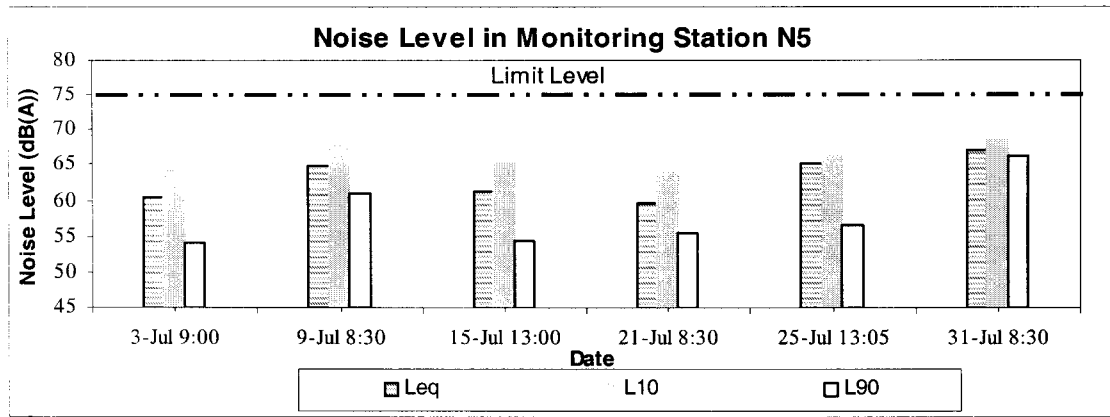
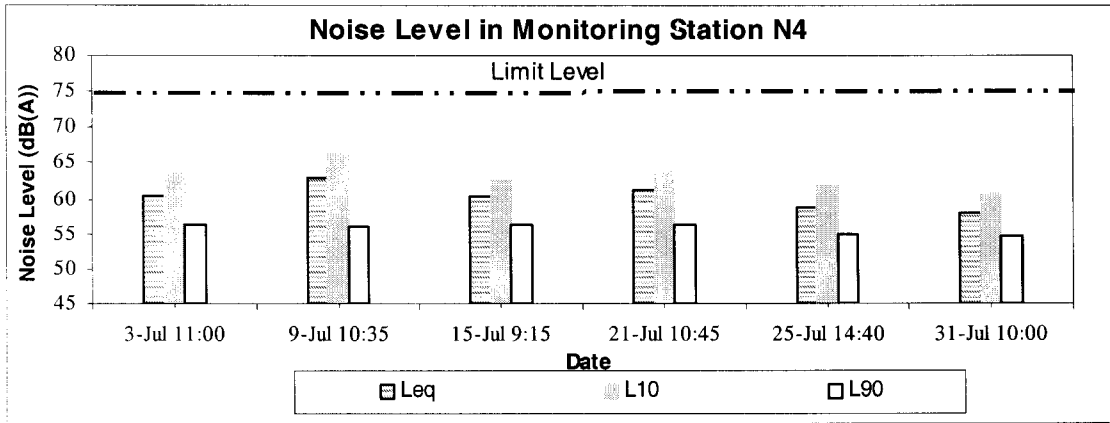
**Monitoring Station N5 (Village House near Royal Ascot)**

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
3-Jul-03	0900 – 0930	60.5	64.9	54.0
9-Jul-03	0830 – 0900	64.8	67.5	61.1
15-Jul-03	1300 – 1330	61.3	65.0	54.5
21-Jul-03	0830 – 0900	59.6	64.2	55.5
25-Jul-03	1305 – 1335	65.2	66.1	56.7
31-Jul-03	0830 – 0900	67.1	68.4	66.1

Min                    59.6                    64.2                    54.0  
 Max                    67.1                    68.4                    66.1

## 2. Plots of Noise Monitoring Results





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**APPENDIX F:**

**Weather Conditions During  
Monitoring Periods**

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**Weather Condition during Monitoring Period  
(From 1 to 31 July 2003)**

Date	Weather	Mean Air Temperature (°C)	Wind Speed (m/s)	Mean Relative Humidity (%)
2-Jul-03	Sunny	29.8	0.3 – 0.9	72
3-Jul-03	Sunny	30	0.7	68
8-Jul-03	Sunny	29.9	0.7 – 0.9	75
9-Jul-03	Fine	30.2	1.0	73
14-Jul-03	Sunny	30.3	0.5	73
15-Jul-03	Fine	30.3	1.0	75
18-Jul-03	Sunny	29.7	1.0	73
21-Jul-03	Cloudy	28.2	1.0	87
24-Jul-03	Trace Rain	28	1.0	83
25-Jul-03	Cloudy	28.6	1.2 – 1.5	84
30-Jul-03	Sunny	29.3	1.2	77
31-Jul-03	Sunny	29.7	1.2 – 1.3	75

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**APPENDIX G:**

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

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### Event / Action Plan for Air Quality

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

**Event / Action Plan for Construction Noise**

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



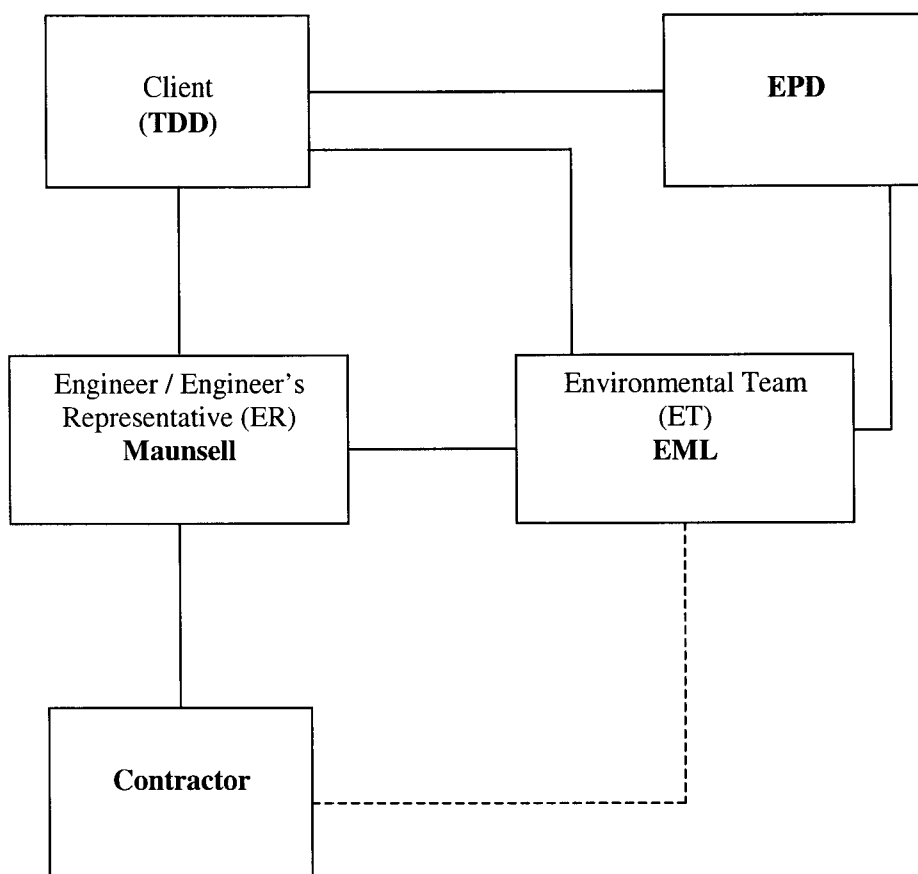
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**APPENDIX H:**

**Project Organisation and  
Contacts of Key Personnel**

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**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

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**APPENDIX I:**

**Summary Records of  
Complaints Received**

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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	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	<ul style="list-style-type: none"> <li>Ad hoc site inspection was carried out on 31/7/02, jointly with the Engineer and Contractor</li> <li>The complaint log sheet, the investigation findings and recommendations on mitigation measures were submitted to the Engineer and Contractor.</li> <li>A letter, addressing to the complainant, will be sent to the police.</li> </ul>	<p>Mitigation actions:</p> <ul style="list-style-type: none"> <li>Excavator-mounted breaker shall not be carried out within 125m from any nearby noise sensitive receivers and;</li> <li>Temporary purposed built barrier should be installed whenever there are high noise level construction activities.</li> </ul>	<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"> <li>Nearby residents complained to police that a generator in Road D15 Site was operating in night-time near Lok Lo Ha Village.</li> <li>Police came to the site to investigate the complaint and inform watchmen to turn off the operating generator at around 8:30pm.</li> <li>The complaint was valid as it concerned with construction noise during the restricted hours.</li> </ul>	<ul style="list-style-type: none"> <li>Ad hoc site inspection was carried out on 8 August 02, jointly with the Engineer and Contractor and ET.</li> <li>The complaint log sheet, the investigation findings and recommendations on mitigation measures were submitted to the Engineer and Contractor.</li> <li>A letter in both English and Chinese, addressing to the complainant, has been sent to the police.</li> </ul>	<p>Mitigation actions:</p> <ul style="list-style-type: none"> <li>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;</li> <li>A watchmen or site staff should be employed to check daily that all generators and plats are switched off after the permissible working hours.</li> </ul>	<p>File Closed.</p>	

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**APPENDIX J:**

**Updated Construction  
Program**

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Sha Tin New Town Stage II Contract No. ST77/01 - Road D15 Linking Lok Shun Path and Tai Po Road

MASTER PROGRAMME (ST77/01/MP/11)

ID	Task Name	Duration	Start	Jun	Jul	Aug	Sep
0	<b>Road D15 Construction Programme</b>	1110 days	12/12/01				
1	1.0 Original Contract Period	965 days	12/12/01				
4	1.2 Works in Section II (822 days)	822 days	12/12/01				
5	1.3 Landscape Work in Section III (1187 Days)	1187 days	12/12/01				
6	2.0 Extension of Times	829 days	22/11/02				
7	2.1 Section I Extension of Time	249.5 days	22/11/02				29/07/2003
8	2.1 Section IA Extension of Time	0 days	31/03/03				
9	2.1 Section II Extension of Time	180 days	13/03/04				
10	2.1 Section III Extension of Time	180 days	13/03/05				
11	3 Preliminary & Site Establishment	728.5 days	12/12/01				
12	3.1 Waste Mgt & Envirntl Control Manual for EPD approval	600 days	12/12/01				
13	3.2 Submission of mitigation proposal	600 days	12/12/01				
14	3.3 Method Statement/CE/Material Submission & Approv	600 days	12/12/01				
17	3.6 Utilities undertakers Co-ordination	650 days	12/12/01				
19	3.9 Condition Survey / Defect Survey	60 days	12/12/01				
20	3.10 Erection of Fencing & Hoarding	414 days	12/12/01				
23	3.10.3 Re-provision of Ex'g KCRFC Fence	40 days	17/03/03				
34	5 Entrustment Works (Section 1 & 1A)	453 days	15/01/02				25/07/2003
35	5.1 Section 1	453 days	15/01/02				25/07/2003
36	5.1.1 General Clearance & Trial Pits Excavation	27 days	15/01/02				
38	5.1.3 Drainage Works (pipelines 1 024-1 026)	340 days	05/06/02				25/07/2003
44	6 Bridge A & General	783 days	12/12/01				
49	6.5 Fabrication PC panel permanent formwork	100 days	24/01/03				
57	6.8 Pile Caps Construction A1 to A5	339 days	19/10/02				
62	6.8.5 AS Pile Cap	217 days	17/03/03				31/07/2003
63	6.8.5.1 A5 Pile Cap (1st Portion)	110 days	17/03/03				
64	6.8.5.2 A5 Pile Cap (2nd Portion)	50 days	09/10/03				
65	6.9 Abutment Wall A1 to A5	344 days	29/11/02				
66	6.9.1 A1 Abutment Wall	127 days	14/04/03				
68	6.9.1.2 A1 (2nd Portion After Bridge C Beams Con	30 days	13/09/03				
69	6.9.2 A2 Pier & Cross Head	244 days	29/01/03				
71	6.9.2.2 A2 Crosshead	24 days	27/10/03				
74	6.9.5 AS Abutment Wall	147 days	01/06/03				
75	6.9.5.1 AS Abutment wall (Portion 1 to allow site c	60 days	01/08/03				
76	6.9.5.2 AS Abutment wall (Portion 2)	40 days	06/12/03				
77	6.10 Install bridge bearings A1 to A5	310 days	23/01/03				
78	6.10.1 A1 - A2 Bridge Bearings	6 days	28/11/03				
79	6.10.2 A2 - A3 Bridge Bearings	6 days	27/11/03				
81	6.10.4 A4 - A5 Bridge Bearings	6 days	02/02/04				
82	6.11 Install Precast Beams A1 to A5	346 days	14/02/03				
83	6.11.1 A1 to A2 PC Beams	6 days	16/12/03				
84	6.11.2 A2 to A3 PC Beams	6 days	08/12/03				
86	6.11.4 A4 to A5 PC Beams	6 days	05/04/04				
87	6.12 Bridge Deck Construction A1 to A5	393 days	24/02/03				
88	6.12.1 A1 to A2 Bridge Deck	50 days	24/12/03				
89	6.12.2 A2 to A3 Bridge Deck	50 days	16/12/03				
91	6.12.4 A4 to A5 Bridge Deck	50 days	13/04/04				
92	6.13 Bridge Deck Drainage	90 days	12/04/04				
93	6.13.1 A1 to A2 Drainage Pipe, M/H cover & Gully	18 days	12/04/04				
94	6.13.2 A2 to A3 Drainage Pipe, M/H cover & Gully	18 days	06/05/04				
95	6.13.3 A3 to A4 Drainage Pipe, M/H cover & Gully	18 days	01/06/04				
96	6.13.4 A4 to A5 Drainage Pipe, M/H cover & Gully	18 days	08/07/04				
97	6.14 Bridge deck Parapet & Curb	313 days	07/07/03				

Date: 15/7/2003

Task Progress: Task Critical Task:

Roll Up Progress: Roll Up Critical Task:

Project Summary:

Milestone:

Summary:

External Tasks:

Page 1

MASTER PROGRAMME (ST77/01/MP/11)

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	Jun	Jul	Aug	Sep
98	6.1.4.1 A1 to A2 Parapet & Curb	24 days	17/04/04				
99	6.1.4.2 A2 to A3 Parapet & Curb	24 days	14/05/04				
100	6.1.4.3 A3 to A4 Parapet & Curb	24 days	07/07/03				07/08/2003
101	6.1.4.4 A4 to A5 Parapet & Curb	24 days	22/06/04				
102	<b>7 Bridge B</b>	<b>540 days</b>	<b>11/08/02</b>				
104	7.2 Pre Bore H-Piles	199 days	13/12/02				16/08/2003
106	7.3.2 B2 H Piles	22 days	23/07/03				16/08/2003
107	7.3 Pile Cap & Abutment Wall B1 & B2	61 days	31/07/03				
108	7.4.1 B1 Piles Cap & Abutment	40 days	31/07/03				
109	7.4.2 B2 Pile Cap & Abutment	40 days	25/08/03				16/09/2003
110	7.4 Install Bridge Bearings	27 days	20/09/03				
111	7.4.1 B1 bridge Bearings	6 days	20/09/03				
112	7.4.2 B2 Bridge Bearings	6 days	16/10/03				
113	7.5 Install Precast Beams B1 to B2	6 days	10/01/04				
114	7.6 Bridge Deck Construction B1 to B2	50 days	17/01/04				
115	7.7 Bridge deck Drainage B1 to B2	18 days	19/03/04				
116	7.8 Bridge Deck Parapet & Curb B1 to B2	18 days	19/03/04				
117	7.9 Remove Temp Platform(Underneath Bridge Deck)	60 days	13/10/03				
118	7.10 Reinstate Extg Valley	60 days	26/04/04				
119	<b>8 Bridge C</b>	<b>626 days</b>	<b>01/08/02</b>				
121	8.2 Pre Bore H-Piles	214 days	18/11/02				
122	8.2.1 C1 H Piles	29 days	07/07/03				09/04/2003
124	8.3 Pile Cap & Abutment Wall C1 & C2	184 days	25/02/03				08/03/2003
126	8.3.1 C1 Pile Cap & Abutment Wall	50 days	09/08/03				
127	8.4 Install Bridge Bearings	361.8 days	02/08/02				
128	8.4.1 C1 Bridge Bearings	6 days	11/10/03				
129	8.4.2 C2 Bridge Bearings	6 days	03/05/03				
131	8.5 Install Precast Beams B1 to B2	131 days	22/05/03				
132	8.5.1 C1 to C2 PC Beams	3 days	23/10/03				
134	8.6 Bridge Deck Construction C1 to C3	178 days	26/05/03				
135	8.6.1 C1 to C2 Bridge Deck	50 days	27/10/03				
136	8.6.2 C2 to C3 Bridge Deck	60 days	26/05/03				05/08/2003
137	8.7 Bridge deck Drainage C1 to C3	36 days	24/12/03				
138	8.7.1 C1 to C2 Drainage Pipe, M/H cover & Gully	18 days	24/12/03				
139	8.7.2 C2 to C3 Drainage Pipe, M/H cover & Gully	18 days	17/01/04				
140	8.8 Bridge Deck Parapet & Curb C1 to C3	132 days	11/08/03				
141	8.8.1 C1 to C2 Parapet & Curb	24 days	17/12/03				
142	8.8.2 C2 to C3 Parapet & Curb	24 days	11/08/03				06/09/2003
143	8.9 Bridge A, B & C Movement Joint Installation	9 days	26/08/04				
144	9 Road works, Pavement & Cycle Track	277 days	06/10/03				
145	9.1 Drainage to on Grade Road	80 days	20/04/04				
146	9.2 Utilities at on Grade Road	80 days	14/05/04				
147	9.3 Carriage way Wearing Course	6 days	19/08/04				
148	9.4 Road Marking & road furniture	3 days	06/09/04				
149	9.5 Foot path	150 days	09/03/04				
150	9.6 Cycle Track	90 days	24/05/04				
151	9.7 Light Poles	150 days	06/10/03				
152	9.8 Road Work Finishings	120 days	06/04/04				
153	10 Retaining Walls	691 days	12/12/01				
154	10.1 RW1	90 days	24/05/03				08/09/2003
155	10.1.1 RW1 Bay 1	40 days	24/05/03				
156	10.1.2 RW1 Bay 2	40 days	09/06/03				
157	10.1.3 RW1 Bay 3	40 days	23/06/03				

Date: 15/7/2003

Task Progress:

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Summary:

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Roll Up Progress:

Roll Up Critical Task:

Roll Up Milestone:

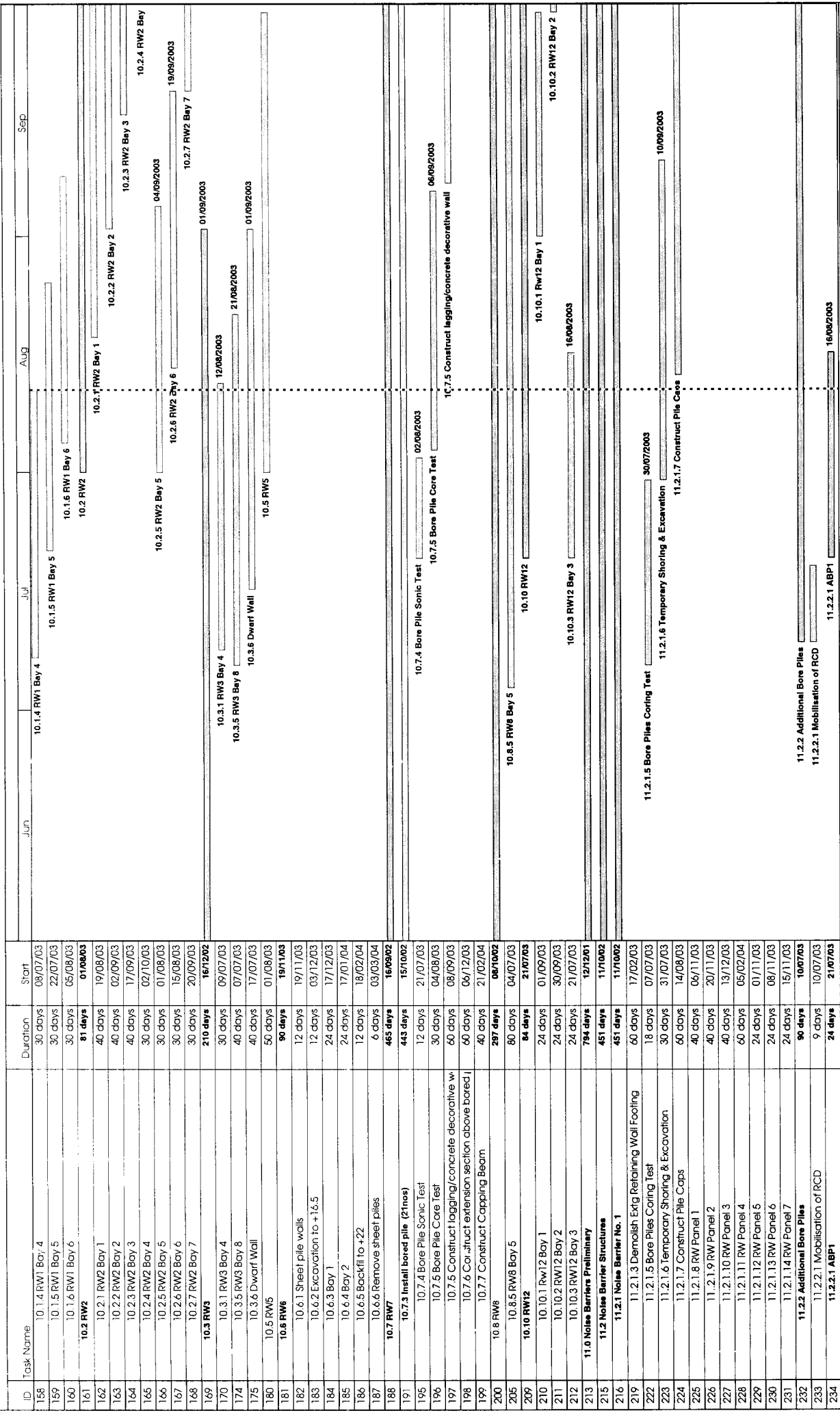
External Tasks:

Project Summary:

Split:

MASTER PROGRAMME (ST77/01/MP/11)

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
156	10.1.4 RW1 Bay 4	30 days	08/07/03
159	10.1.5 RW1 Bay 5	30 days	22/07/03
160	10.1.6 RW1 Bay 6	30 days	05/08/03
161	10.2 RW2	81 days	01/08/03
162	10.2.1 RW2 Bay 1	40 days	19/08/03
163	10.2.2 RW2 Bay 2	40 days	02/09/03
164	10.2.3 RW2 Bay 3	40 days	17/09/03
165	10.2.4 RW2 Bay 4	30 days	02/10/03
166	10.2.5 RW2 Bay 5	30 days	01/08/03
167	10.2.6 RW2 Bay 6	30 days	15/08/03
168	10.2.7 RW2 Bay 7	30 days	20/09/03
169	10.3 RW3	210 days	16/12/02
170	10.3.1 RW3 Bay 4	30 days	09/07/03
174	10.3.5 RW3 Bay 8	40 days	07/07/03
175	10.3.6 Dwaif Wall	40 days	17/07/03
180	10.5 RW5	50 days	01/08/03
181	10.6 RW6	90 days	19/11/03
182	10.6.1 Sheet pile walls	12 days	19/11/03
183	10.6.2 Excavation to +16.5	12 days	03/12/03
184	10.6.3 Bay 1	24 days	17/12/03
185	10.6.4 Bay 2	24 days	17/01/04
186	10.6.5 Backfill to +22	12 days	18/02/04
187	10.6.6 Remove sheet piles	6 days	03/03/04
188	10.7 RW7	465 days	16/09/02
191	10.7.3 Install bored pile (21nos)	443 days	15/10/02
196	10.7.4 Bore Pile Sonic Test	12 days	21/07/03
196	10.7.5 Bore Pile Core Test	30 days	04/08/03
197	10.7.5 Construct lagging/concrete decorative wall	60 days	08/09/03
198	10.7.6 Construct extension section above bored pile	60 days	06/12/03
199	10.7.7 Construct Capping Beam	40 days	21/02/04
200	10.8 RW8	297 days	08/10/02
205	10.8.5 RW8 Bay 5	80 days	04/07/03
209	10.10 RW12	84 days	21/07/03
210	10.10.1 RW12 Bay 1	24 days	01/09/03
211	10.10.2 RW12 Bay 2	24 days	30/09/03
212	10.10.3 RW12 Bay 3	24 days	21/07/03
213	11.0 Noise Barrier Preliminary	794 days	12/12/01
215	11.2 Noise Barrier Structures	451 days	11/10/02
216	11.2.1 Noise Barrier No. 1	451 days	11/10/02
219	11.2.1.3 Demolish Extg Retaining Wall Footing	60 days	17/02/03
222	11.2.1.5 Bore Piles Coring Test	18 days	07/07/03
223	11.2.1.6 Temporary Shoring & Excavation	30 days	31/07/03
224	11.2.1.7 Construct Pile Caps	60 days	14/08/03
225	11.2.1.8 RW Panel 1	40 days	06/11/03
226	11.2.1.9 RW Panel 2	40 days	20/11/03
227	11.2.1.10 RW Panel 3	40 days	13/12/03
228	11.2.1.11 RW Panel 4	60 days	05/02/04
229	11.2.1.12 RW Panel 5	24 days	01/11/03
230	11.2.1.13 RW Panel 6	24 days	08/11/03
231	11.2.1.14 RW Panel 7	24 days	15/11/03
232	11.2.2 Additional Bore Piles	90 days	10/07/03
233	11.2.2.1 Mobilisation of RCD	9 days	10/07/03
234	11.2.2.1 ABP1	24 days	21/07/03

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ID	Task Name	Duration	Start	Jun	Jul	Aug	Sep
235	11.2.2.1 Excavation and install temp casing	3 days	21/07/03				
236	11.2.2.2 Set up RCD to drill through obstruct	1 day	24/07/03				
237	11.2.2.3 Drill through obstruction	5 days	25/07/03				
238	11.2.2.4 Remove RCD	1 day	31/07/03				
239	11.2.2.5 Drive in temp casing and excavate	3 days	01/08/03				
240	11.2.2.6 Ste up RCD to drill rock socket	1 day	05/08/03				
241	11.2.2.7 Drill through rock socket	6 days	06/08/03				
242	11.2.2.8 Remove RCD	1 day	13/08/03				
243	11.2.2.9 Air lifting	1 day	14/08/03				
244	11.2.2.10 Fix reinforcement	1 day	15/08/03				
245	11.2.2.11 Place bore pile concrete	1 day	16/08/03				
246	<b>11.2.2.2 ABP2</b>	<b>24 days</b>	<b>18/08/03</b>				15/09/2003
247	11.2.2.1 Excavation and install temp casing	3 days	18/08/03				
248	11.2.2.2 Set up RCD to drill through obstruct	1 day	21/08/03				
249	11.2.2.3 Drill through obstruction	5 days	22/08/03				
250	11.2.2.4 Remove RCD	1 day	28/08/03				
251	11.2.2.5 Drive in temp casing and excavate	3 days	29/08/03				
252	11.2.2.6 Ste up RCD to drill rock socket	1 day	02/09/03				
253	11.2.2.7 Drill through rock socket	6 days	03/09/03				
254	11.2.2.8 Remove RCD	1 day	10/09/03				
255	11.2.2.9 Air lifting	1 day	11/09/03				
256	11.2.2.10 Fix reinforcement	1 day	13/09/03				
257	11.2.2.11 Place bore pile concrete	1 day	15/09/03				
258	<b>11.2.2.3 Bore Piles Tests</b>	<b>12 days</b>	<b>11/10/03</b>				
259	11.2.2.3.1 Sonic Test	1 day	11/10/03				
260	11.2.2.3.2 Core Test	7 days	15/10/03				
261	11.2.2.3.3 Grouting Sonic tubes and core hole	2 days	23/10/03				
262	<b>11.2.3 Noise Barrier No. 4B &amp; 4C</b>	<b>120 days</b>	<b>16/09/03</b>				
263	11.2.2.1 Sheet Pile wall	0 days	16/08/03				
264	11.2.2.2 Excavation	12 days	18/08/03				
265	11.2.2.3 Construct Footing and Walls	40 days	01/09/03				
266	11.2.2.4 Backfill and remove sheet piles	8 days	20/10/03				
267	11.2.2.5 Granite Cladding	60 days	29/10/03				
268	<b>11.2.4 Noise Barrier No. 5</b>	<b>94 days</b>	<b>05/11/03</b>				
269	11.2.3.1 Excavation	12 days	05/11/03				
270	11.2.3.2 Construct Footing and Walls	70 days	19/11/03				
271	11.2.3.3 Backfill	12 days	16/02/04				
272	<b>11.4 Noise Barrier Steel Post &amp; Panels</b>	<b>794 days</b>	<b>12/12/01</b>				
274	11.4.1 Design, Submission for approval	250 days	19/06/02				
275	11.4.2 Fabrication and Delivery	200 days	17/04/03				
276	<b>11.4.3 Noise Barrier Installation</b>	<b>194 days</b>	<b>17/12/03</b>				
277	11.4.3.1 Noise Barrier No. 1	60 days	20/04/04				
278	11.4.3.2 Noise Barrier No. 2	60 days	17/12/03				
279	11.4.3.3 Noise Barrier No. 3	60 days	28/01/04				
280	11.4.3.4 Noise Barrier No. 4A	60 days	17/12/03				
281	11.4.3.5 Noise Barrier No. 4B	60 days	03/03/04				
282	11.4.3.6 Noise Barrier No. 4C	30 days	28/04/04				
283	11.4.3.7 Noise Barrier No. 5	60 days	04/05/04				
284	<b>12 Box Culvert Extension</b>	<b>634 days</b>	<b>27/06/02</b>				
288	12.4 Construct 1400 box culvert	166 days	10/04/03				
289	<b>12.5 Construct 1500 pipe</b>	<b>388 days</b>	<b>24/04/03</b>				
290	12.5.1 Construct 1500 pipe CH 0 to CH 30	100 days	24/04/03				
291	12.5.2 Construct 1500 pipe CH 30 to CH 62	44 days	13/12/03				

Date: 15/7/2003

Task  
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**MASTER PROGRAMME (ST77/01/MP/11)**  
 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	Jun	Jul	Aug	Sep
292	12.5.3 Construct 1500 pipe CH 60 to CH 82	70 days	19/05/04				
295	12.6 Construct 1400 Box Culvert Extension	90 days	02/06/03				17/09/2003
296	13.0 Underground Drainage & Utilities	437 days	15/01/03				
297	13.1 Drainage works at Lok Ho Lo roundabout	437 days	15/01/03				04/09/2003
298	13.1.1 Drainage works at stage 2 of TIM	190 days	15/01/03				
299	13.1.2 Drainage works at stage 3 of TIM	44 days	13/12/03				
300	13.1.3 Drainage works at stage 4 of TIM	40 days	10/02/04				
301	13.1.3 Drainage works at stage 5 of TIM	40 days	29/03/04				
302	13.1.4 Drainage works at stage 6 of TIM	40 days	19/05/04				
303	13.2 CLP Cable Ducts	30 days	13/12/03				
304	13.3 Water pipes and associated Works	323 days	01/03/03				
305	13.3.1 Water Mains for irrigation system	120 days	05/11/03				
306	13.3.2 Fire Service Pipe & Hydrant	60 days	06/11/03				
307	13.3.3 Water Main Diversion(1400 Box Culvert)	70 days	01/03/03				
308	13.4 Telephone Ducts	40 days	24/11/03				
309	13.5 Existing Utilities Diversion	132 days	29/10/03				
310	13.5.1 RW1, RW2 and 1400 Box Culvert	100 days	06/11/03				
311	13.5.2 Abutment A1 to RW11	89 days	19/11/03				
312	13.5.3 RW11 to C2	100 days	29/10/03				
313	13.5.4 A1 Lok King Street	100 days	05/12/03				
314	14 Staircases	480 days	28/01/03				
315	14.1 Stair (NB 4C)	12 days	29/10/03				
316	14.2 Stair 2 (RW8)	40 days	19/06/03				
317	14.3 Stair 3 (RW3)	50 days	15/03/03				
318	14.4 Stair 4 (RW11)	30 days	15/10/03				
319	14.5 Stair 5 (RW5)	30 days	30/09/03				
320	14.6 Stair 6 (Abutment B1)	24 days	27/10/03				
321	14.7 Stair 7 (RW7)	24 days	27/10/03				
322	14.8 Stair 8 (Level +39)	100 days	18/06/03				
323	14.9 Stair 9 (CH300)	12 days	10/01/04				
324	14.10 Stair 10 (RW12)	18 days	29/10/03				
325	14.11 Stair 11 (Abutment A5)	12 days	13/10/03				
326	14.12 Stair 12 (House 102)	6 days	02/09/04				
328	15 Standard Refuse Collection Point	60 days	20/04/04				
329	16 Rain Shelter no.1&2	60 days	28/01/04				
330	17 Landscaping	120 days	09/09/04				
331	17.1 Tree Planting	60 days	09/09/04				
332	17.2 Turfing	30 days	29/12/04				
333	18 Project Completion & Handover	587 days	26/06/03				
334	18.1 Section I Completion	0 days	25/07/03				
335	18.2 Section IA Completion	0 days	26/06/03				
336	18.3 Section II Completion	0 days	08/09/04				
337	18.4 Section III Completion	0 days	02/02/05				

14.2 Stair 2 (RW8) 05/08/2003

23/06/2003

14.5 Stair 5 (RW5) 14.11 S

14.8 Stair 8 (Level +39)

18 Project Completion & Handover

18.1 Section I Completion 25/07/2003

18.2 Section IA Completion 26/06/2003

18 Project Completion & Handover

18.1 Section I Completion 25/07/2003

18.2 Section IA Completion 26/06/2003

Date: 15/7/2003

Task Progress Summary

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Summary: [Progress Bar]

Task: [Progress Bar]

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Critical Task: [Progress Bar]

Legend:

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- Task Progress: [Patterned Bar]
- Critical Task Progress: [Patterned Bar]
- Milestone: [Patterned Bar]
- Summary: [Patterned Bar]
- Task: [Patterned Bar]
- Task Progress: [Patterned Bar]
- Critical Task: [Patterned Bar]

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