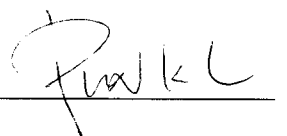


**Sha Tin New Town, Stage II Road D15 Linking Lok Shun Path and
Tai Po Road (Contract No. ST 77/01)**

**Monthly Environmental Monitoring & Audit Report –
May 2004**

Checked in accordance with EML QA Procedure PQP-04
Environmental Team Leader

A handwritten signature in black ink, appearing to read "Paul L.", is written over a horizontal line.

EXECUTIVE SUMMARY

This impact environmental monitoring report has been 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. The EM&A services carried out in May 2004 are included in this report.

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

Over the reporting period, all monitored 24-hour TSP, 1-hour TSP and noise ($L_{eq}(5min)$) monitoring data were below the Action and Limit 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 Bridges A, B and C;
- Retaining walls 1, 2, and 7;
- Noise barrier construction for noise barrier No. 1, No.4C and No. 4B;
- Box culvert extension of 1500 pipe;
- Underground drainage and water pipes at Lok Shun Path Roundabout; and
- Construction of staircases 6, and 12.

Regular site inspection was conducted in this reporting month and the mitigation measures, as discussed in Section 3.4, were assessed.

In regard to the environmental issues in the last reporting month, it was noted from site inspections that the stagnant water near noise barrier NB1, Bridge C and retaining wall RW3 was removed. Also, the existing u-channels near Staircase 2 had been cleared of debris. In addition, a temporary wheel washing bay had been constructed with a makeshift sand removal system to avoid the direct discharge of washwater to gullies.

In this month, however, stagnant water was observed near Lok Lo Ha Village House No. 97 which was prone to mosquito breeding. Also, some of the gullies at the Lok Lo Ha roundabout were not provided with fabric mesh which might result in blockage from site discharges.

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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 are to:

- 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 monthly EM&A report is for the monitoring period in May 2004. In this report, 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 are included. 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. Appendix H** lists the project organization and contacts of key personnel.



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 are included in **Appendix A**. The time schedule for the current reporting month and the tentative monitoring schedule for the next reporting month 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 May 2004 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 **Appendices C and D**. **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	69.2	38 – 89	0	0
	A2	72.6	44 – 103	0	0
	A3	73.8	39 – 108	0	0
1 – hour TSP	A1	146.3	113 – 243	0	0
	A2	163.3	111 – 222	0	0
	A3	170.3	81 – 234	0	0

From **Table 2.2** 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 fine or cloudy. 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 included construction of Bridges A, B and C, retaining walls, noise barrier, box culvert

extension, underground drainage and water pipes and staircases. It was also observed that construction activities were carried out on the other construction sites that were not related to this Project in the vicinity of the monitoring stations.

Comparing with the monitoring results from those of the last month, the calculated mean 24-hour and 1-hour TSP levels at all stations were generally lower in this reporting month. The highest mean TSP level was recorded at Station A3 (1-hour TSP) with a value of $170.3\mu\text{g}/\text{m}^3$ which was lower than the value of $182.7\mu\text{g}/\text{m}^3$ recorded in April.



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 the 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**. The time schedule for the current monitoring reporting month and the tentative monitoring schedule for the next reporting month are attached in **Appendix B**.

2.2.2 Monitoring Locations

The impact noise monitoring locations are presented in **Table 2.3** and are 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 May 2004 at the five designated locations were evaluated. The monitoring results obtained are summarised in **Table 2.4**. Detailed results, including graphical plots and relevant field logs, are presented in **Appendix E**. **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	60.2 – 66.2	0	0
	N2	61.0 – 65.3	0	0
	N3	54.0 – 56.5	0	0
	N4	59.8 – 61.2	0	0
	N5	56.1 – 58.5	0	0

In **Table 2.4**, all the recorded noise monitoring data were below the criteria as set out in the Action and Limit Levels in **Appendix A**. There was no exceedance of noise level at all the monitoring stations during the month of May 2004.

Over the reporting period, the local weather conditions during the sampling were mainly fine or cloudy. All the monitoring was conducted with wind speeds of about 0.5 m/s. Traffic and construction activities were the major noise sources identified at the five monitoring locations. It was noted from field log that activities of excavation and breaking were present in the vicinity of the monitoring stations during the monitoring period.

Comparing with the monitoring results recorded in the last reporting period, the ranges of measured noise levels during this reporting month were not significantly different from those in

April. The highest level was recorded at Station N1 (66.2 dB(A)) and occurred in the morning of 24 May. According to the field log, the major noise source at that time was sheet piling operation as well as traffic noise.



Figure 2.2 Noise Monitoring Locations

3. ENVIRONMENTAL AUDIT

3.1 General

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

- Stagnant water within the site, especially near noise barrier NB1, Bridge C and retaining wall RW3, shall be removed;
- The existing u-channels near Staircase 2 should be cleared of construction wastes and debris;
- The new wheel washing bay should be constructed as soon as possible.

It was noted from site inspections that the stagnant water near noise barrier NB1, Bridge C and retaining wall RW3 was removed. Also, the existing u-channels near Staircase 2 had been cleared of debris. In addition, a temporary wheel washing bay had been constructed with a makeshift sand removal system to avoid the direct discharge of washwater to gullies.

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
6 May 2004 (Thursday)	Regular Site Inspection
13 May 2004 (Thursday)	Regular Site Inspection
19 May 2004 (Wednesday)	Regular Site Inspection
27 May 2004 (Thursday)	Regular Site Inspection

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

- Construction of Bridges A, B and C;
- Retaining walls 1, 2, and 7;
- Noise barrier construction for noise barrier No. 1, No.4C and No. 4B;
- Box culvert extension of 1500 pipe;
- Underground drainage and water pipes at Lok Shun Path Roundabout; and
- Construction of staircases 6, and 12.

3.2 Assessment of Environmental Monitoring Results

In this reporting month, there were no exceedances recorded for both impact air quality and noise monitoring. The monitoring results were 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	01/5/04 to 31/5/04	15	0	0
2	1 – hour TSP	01/5/04 to 31/5/04	45	0	0
3	30-minute Noise Measurement (Leq)	01/5/04 to 31/5/04	25	0	0

3.3 Environmental Complaints

No environmental complaint was received by the Environmental Team against the construction site in this reporting month. **Table 3.3** shows the summary record for this reporting month. **Table 3.4** summarises the complaint statistics from the commencement of the Project to date. **Appendix I** lists details of all the received complaints relating to the activities carried out 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 presents 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	No longer required
Water	Wheel Washing Facility	Temporary wheel washing bay with sand removal system
	Sand/Silt Removal Facilities	No longer required
	Measures along stream-banks north-east of Lok Shun Path Roundabout	No longer required
	Diversion of Stream Course via drainage pipe	Sand trap was installed at downstream end of stream course
Wastewater	Water reuse at wheel washing facility and site investigation drilling works.	No longer 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 as necessary

In this month, however, stagnant water was observed near Lok Lo Ha Village House No. 97 which was prone to mosquito breeding. Also, some of the gullies at the Lok Lo Ha roundabout were not provided with fabric mesh which might result in blockage from site discharges.

4. FUTURE KEY ISSUE AND RECOMMENDATION

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

- Stagnant water near Lok Lo Ha Village House No. 97, shall be removed;
- Gullies at the Lok Lo Ha roundabout shall be provided with fabric mesh.

The updated construction program for the following months is attached in **Appendix J**. The monitoring tentative schedule for the next reporting month is 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. Time Schedule for the Current Reporting Month – May 2004

Contract No. ST77/01

Sha Tin New Town, Stage II

Road D15 Linking Lok Shun Path and Tai Po Road

Time Schedule for Construction Phase Dust Monitoring for May 2004

May-04	Day	Start Time	
		24-hr TSP	1-hr TSP
1	Sat	x	x
2	Sun	x	x
3	Mon	x	x
4	Tue	x	x
5	Wed	09:30	08:00
6	Thu	x	09:50,11:00
7	Fri	x	x
8	Sat	x	x
9	Sun	x	x
10	Mon	x	x
11	Tue	09:30	08:00
12	Wed	x	09:50,11:00
13	Thu	x	x
14	Fri	x	x
15	Sat	x	x
16	Sun	x	x
17	Mon	09:30	08:00
18	Tue	x	09:50,11:00
19	Wed	x	x
20	Thu	x	x
21	Fri	09:30	08:00
22	Sat	x	x
23	Sun	x	x
24	Mon	x	09:00,11:00
25	Tue	x	x
26	Wed	x	x
27	Thu	09:30	08:00
28	Fri	x	09:50,11:00
29	Sat	x	x
30	Sun	x	x
31	Mon	x	x

Contract No. ST77/01

Sha Tin New Town, Stage II

Road D15 Linking Lok Shun Path and Tai Po Road

Time Schedule for Construction Phase Noise Monitoring for May 2004

May-04	Day	Start Time				
		N1	N2	N3	N4	N5
1	Sat	x	x	x	x	x
2	Sun	x	x	x	x	x
3	Mon	x	x	x	x	x
4	Tue	x	x	x	x	x
5	Wed	x	x	x	x	x
6	Thu	09:50	11:15	13:00	10:25	09:00
7	Fri	x	x	x	x	x
8	Sat	x	x	x	x	x
9	Sun	x	x	x	x	x
10	Mon	x	x	x	x	x
11	Tue	x	x	x	x	X
12	Wed	09:50	11:15	13:00	10:25	09:00
13	Thu	x	x	x	x	X
14	Fri	x	x	x	x	x
15	Sat	x	x	x	x	X
16	Sun	x	x	x	x	X
17	Mon	x	x	x	x	X
18	Tue	09:50	11:15	13:00	10:25	09:00
19	Wed	x	x	x	x	X
20	Thu	x	x	x	x	x
21	Fri	x	x	x	x	X
22	Sat	x	x	x	x	x
23	Sun	x	x	x	x	x
24	Mon	09:50	11:15	13:00	10:25	09:00
25	Tue	x	x	x	x	x
26	Wed	x	x	x	x	x
27	Thu	x	x	x	x	x
28	Fri	09:50	11:15	13:00	10:25	09:00
29	Sat	x	x	x	x	x
30	Sun	x	x	x	x	x
31	Mon	x	x	x	x	x

2. Tentative Schedule for the Next Reporting Month – June 2004

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 2004

Jun-04	Day	Start Time	
		24-hr TSP	1-hr TSP
1	Tue	x	x
2	Wed	09:30	08:00
3	Thu	x	09:50,11:00
4	Fri	x	x
5	Sat	x	x
6	Sun	x	x
7	Mon	x	x
8	Tue	09:30	08:00
9	Wed	x	09:50,11:00
10	Thu	x	x
11	Fri	x	x
12	Sat	x	x
13	Sun	x	x
14	Mon	09:30	08:00
15	Tue	x	09:50,11:00
16	Wed	x	x
17	Thu	x	x
18	Fri	09:30	08:00
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	09:30	08:00
25	Fri	X	09:50,11:00
26	Sat	X	x
27	Sun	X	x
28	Mon	X	x
29	Tue	X	x
30	Wed	09:30	08:00

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 June 2004

Jun-04	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	11:15	13:00	10:25	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	11:15	13:00	10:25	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	11:15	13:00	10:25	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	11:15	13:00	10:25	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	11:15	13:00	10:25	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

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			
5-May-04	2.8619	3.0035	1.11	1.11	13220.17	13244.17	1440	89	Cloudy
11-May-04	2.9014	2.9617	1.11	1.11	13247.17	13271.17	1440	38	Sunny
17-May-04	2.9161	3.0560	1.11	1.11	13274.17	13298.17	1440	88	Fine
21-May-04	2.9238	3.0069	1.11	1.11	13301.17	13325.17	1440	52	Cloudy
27-May-04	2.8835	3.0105	1.11	1.11	13328.17	13352.17	1440	79	Fine
							Min	38	
							Max	89	
							Average	69.2	

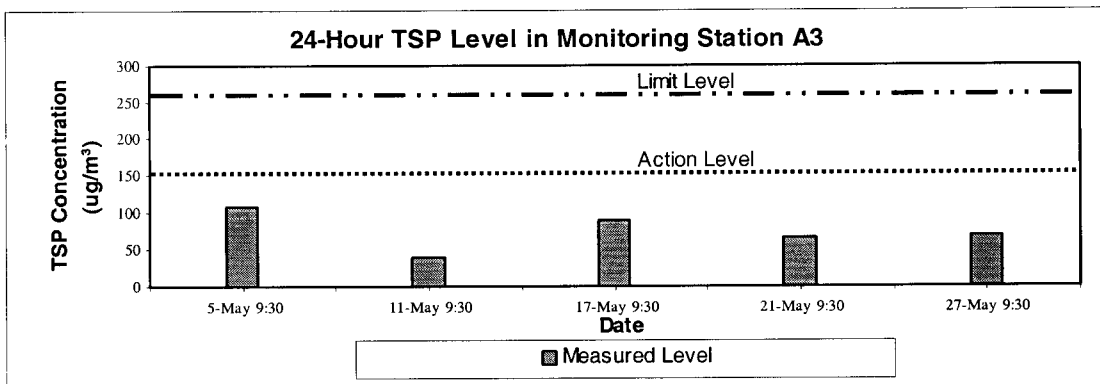
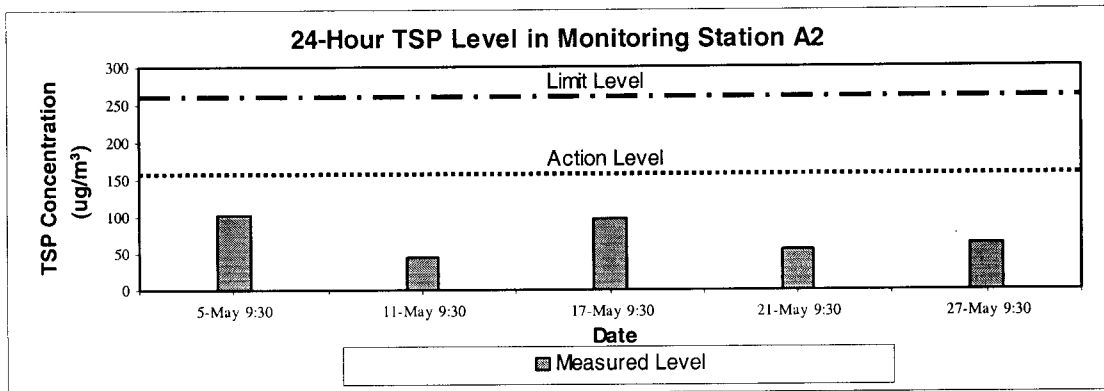
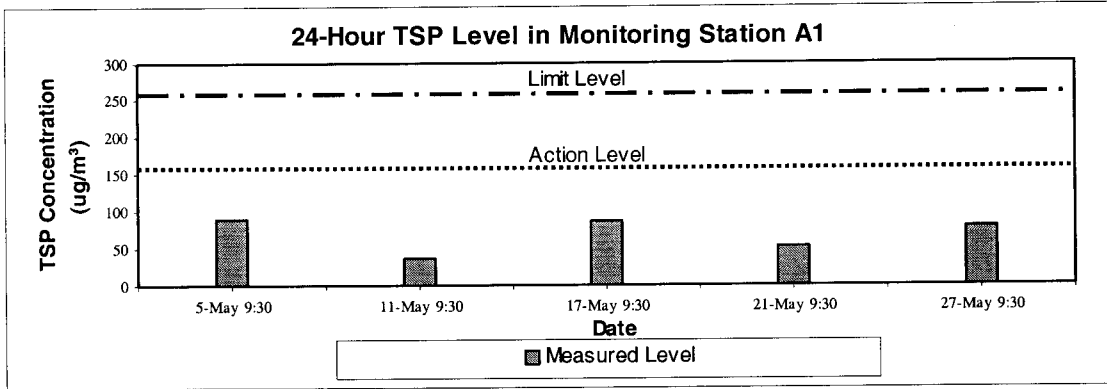
Monitoring Station A2 (Lok Lo Ha Village House No. 104)

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			
5-May-04	2.8384	3.0032	1.11	1.11	3893.75	3917.75	1440	103	Cloudy
11-May-04	2.8961	2.9665	1.11	1.11	3920.75	3944.75	1440	44	Sunny
17-May-04	2.9038	3.0609	1.11	1.11	3947.75	3971.75	1440	98	Fine
21-May-04	2.9390	3.0260	1.11	1.11	3974.75	3998.75	1440	54	Cloudy
27-May-04	2.8400	2.9417	1.11	1.11	4001.75	4025.75	1440	64	Fine
							Min	44	
							Max	103	
							Average	72.6	

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			
5-May-04	2.8484	3.0207	1.11	1.11	1408.07	1432.07	1440	108	Cloudy
11-May-04	2.8928	2.9555	1.11	1.11	1435.07	1459.07	1440	39	Sunny
17-May-04	2.8801	3.0231	1.11	1.11	1462.07	1486.07	1440	89	Fine
21-May-04	2.9163	3.0200	1.11	1.11	1489.07	1513.07	1440	65	Cloudy
27-May-04	2.8471	2.9565	1.11	1.11	1516.07	1540.07	1440	68	Fine
							Min	39	
							Max	108	
							Average	73.8	

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, $\mu\text{g}/\text{m}^3$
5-May-04	0800 – 0900	113
6-May-04	0950 – 1050	194
6-May-04	1100 – 1200	158
11-May-04	0800 – 0900	140
12-May-04	0950 – 1050	141
12-May-04	1100 – 1200	123
17-May-04	0800 – 0900	144
18-May-04	0950 – 1050	135
18-May-04	1100 – 1200	128
21-May-04	0800 – 0900	159
24-May-04	0900 – 1000	153
24-May-04	1100 – 1200	243
27-May-04	0800 – 0900	122
28-May-04	0950 – 1050	114
28-May-04	1100 – 1200	128
	Average	146.3
	Min	113
	Max	243

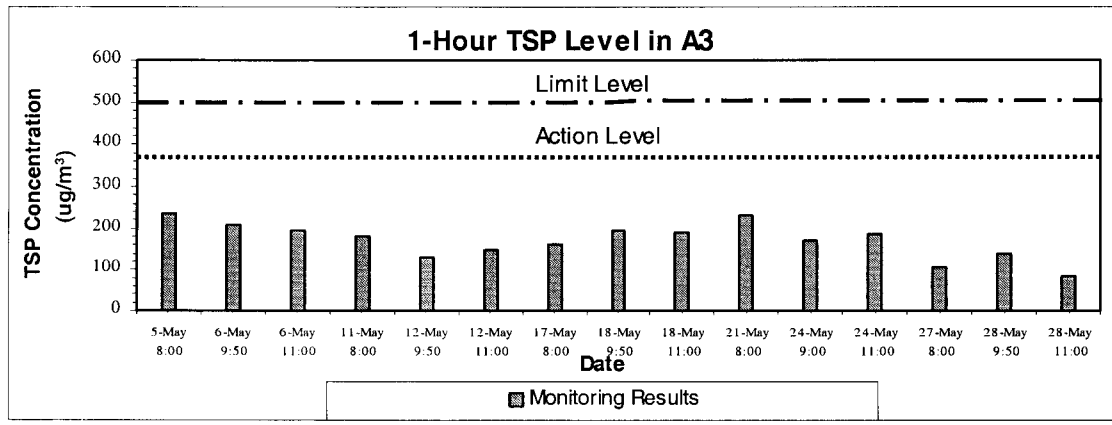
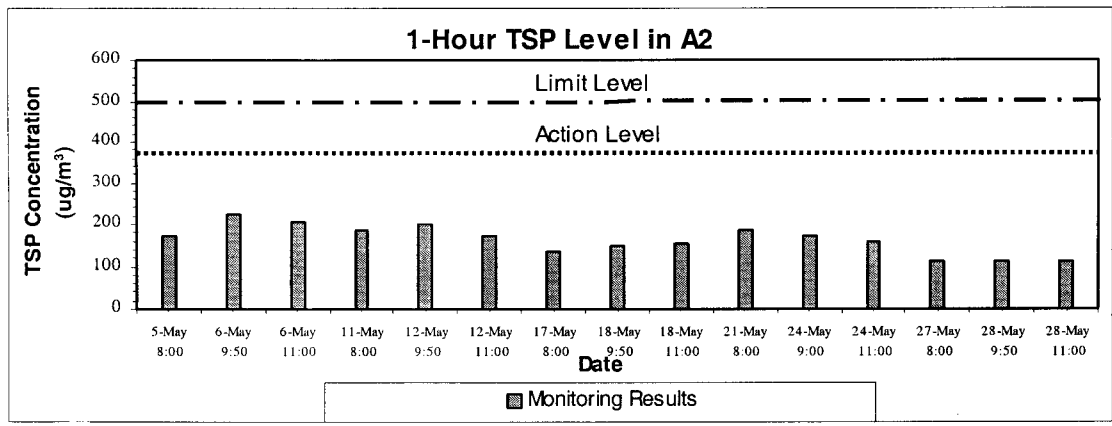
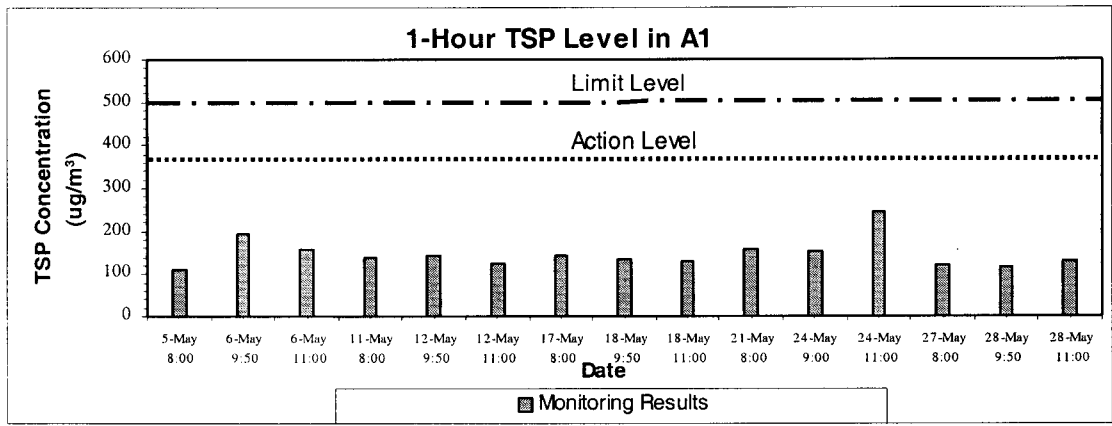
Station A2 (Lok Lo Ha Village House No. 104)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
5-May-04	0800 – 0900	170
6-May-04	0950 – 1050	222
6-May-04	1100 – 1200	206
11-May-04	0800 – 0900	188
12-May-04	0950 – 1050	198
12-May-04	1100 – 1200	171
17-May-04	0800 – 0900	135
18-May-04	0950 – 1050	150
18-May-04	1100 – 1200	153
21-May-04	0800 – 0900	188
24-May-04	0900 – 1000	173
24-May-04	1100 – 1200	159
27-May-04	0800 – 0900	113
28-May-04	0950 – 1050	111
28-May-04	1100 – 1200	113
	Average	163.3
	Min	111
	Max	222

Station A3 (Village House near Tsun King Road)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
5-May-04	0800 – 0900	234
6-May-04	0950 – 1050	210
6-May-04	1100 – 1200	194
11-May-04	0800 – 0900	182
12-May-04	0950 – 1050	128
12-May-04	1100 – 1200	150
17-May-04	0800 – 0900	161
18-May-04	0950 – 1050	195
18-May-04	1100 – 1200	188
21-May-04	0800 – 0900	230
24-May-04	0900 – 1000	170
24-May-04	1100 – 1200	185
27-May-04	0800 – 0900	108
28-May-04	0950 – 1050	138
28-May-04	1100 – 1200	81
	Average	170.3
	Min	81
	Max	234

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
6-May-04	0914 – 0944	61.0	63.3	57.0
12-May-04	0912 – 0942	60.5	63.0	58.4
18-May-04	0912 – 0942	60.2	62.8	58.0
24-May-04	0910 – 0940	66.2	68.4	64.0
28-May-04	0911 – 0941	61.2	63.8	58.7

Min	60.2	62.8	57.0
Max	66.2	68.4	64.0

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
6-May-04	1040 – 1110	63.6	65.6	59.9
12-May-04	1041 – 1111	64.6	67.0	61.5
18-May-04	1042 – 1112	61.0	63.3	58.1
24-May-04	1021 – 1051	64.5	66.8	61.2
28-May-04	1040 – 1110	65.3	68.1	62.4

Min	61.0	63.3	58.1
Max	65.3	68.1	62.4

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
6-May-04	1126 – 1156	55.3	57.2	52.1
12-May-04	1127 – 1157	56.1	57.6	54.0
18-May-04	1127 – 1157	56.5	58.5	54.4
24-May-04	1112 – 1142	54.0	56.0	51.0
28-May-04	1120 – 1150	54.7	56.5	51.6

Min	54.0	56.0	51.0
Max	56.5	58.5	54.4

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
6-May-04	1002 – 1032	61.2	63.4	58.3
12-May-04	1007 – 1037	59.8	62.5	57.6
18-May-04	1007 – 1037	60.7	63.0	57.9
24-May-04	0945 – 1015	60.8	62.8	58.1
28-May-04	1002 – 1032	60.2	62.7	57.8

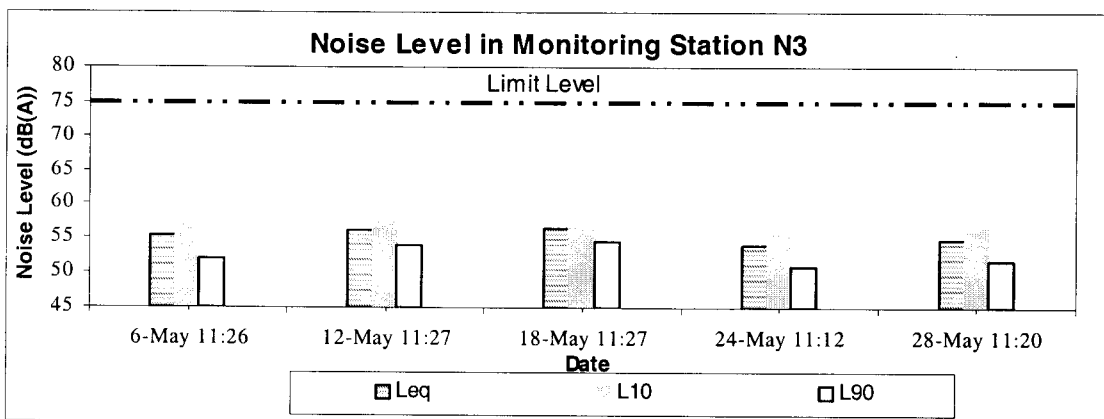
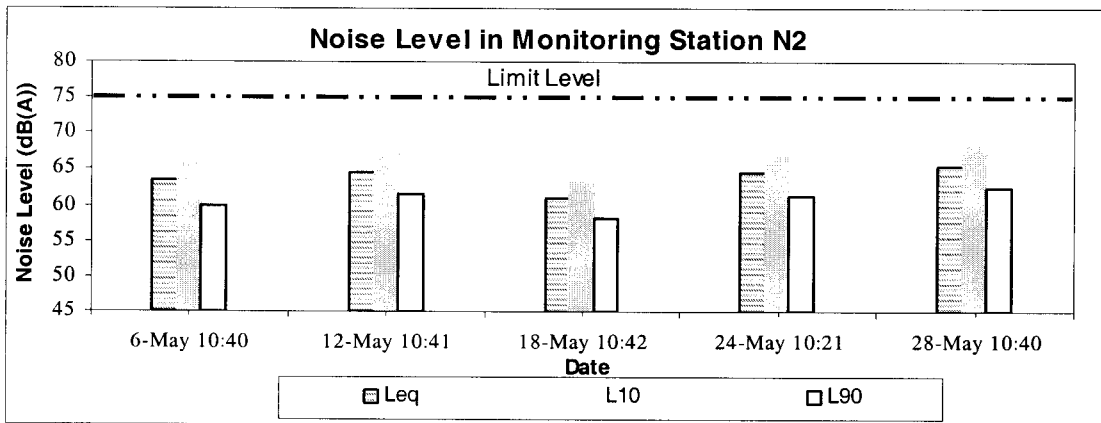
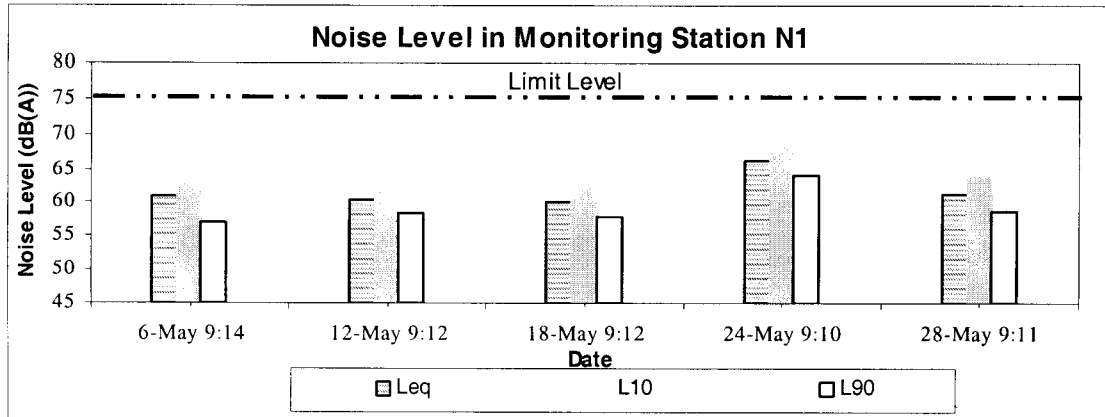
Min 59.8 62.5 57.6
Max 61.2 63.4 58.3

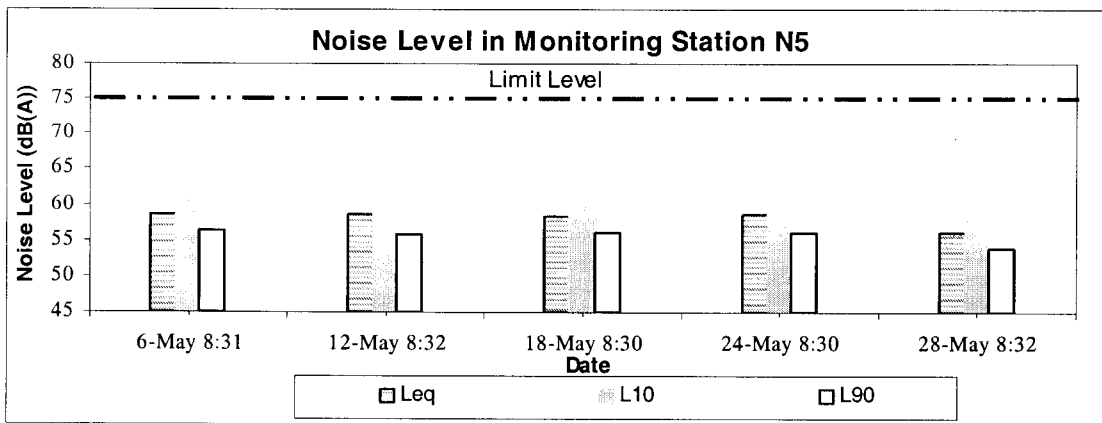
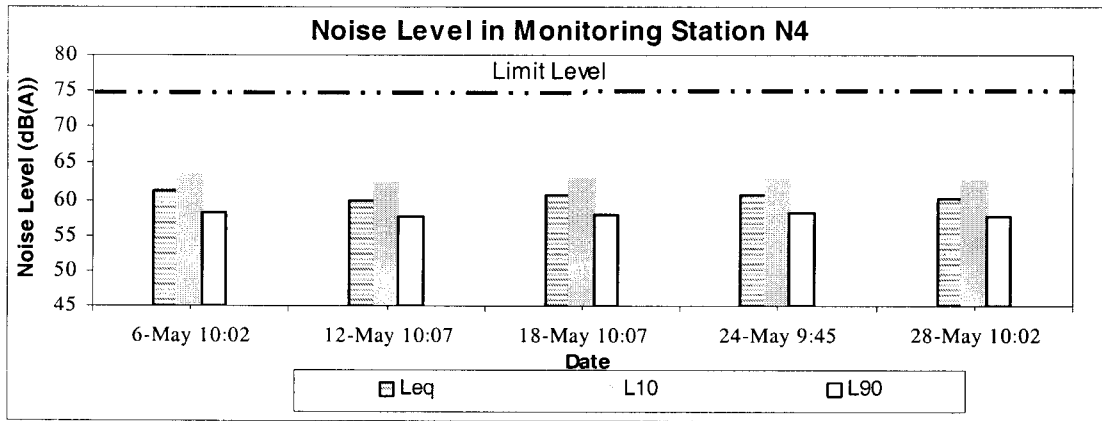
Monitoring Station N5 (Village House near Royal Ascot)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L _{eq}	L ₁₀	L ₉₀
6-May-04	0831 – 0901	58.5	60.8	56.4
12-May-04	0832 – 0902	58.5	60.9	55.8
18-May-04	0830 – 0900	58.3	60.5	56.0
24-May-04	0830 – 0900	58.4	60.2	56.0
28-May-04	0832 – 0902	56.1	58.1	53.7

Min 56.1 58.1 53.7
Max 58.5 60.9 56.4

2. Plots of Noise Monitoring Results





APPENDIX F:

**Weather Conditions During
Monitoring Periods**

**Weather Condition during Monitoring Period
(From 1 to 31 May 2004)**

Date	Weather	Mean Air Temperature (°C)	Wind Speed (m/s)	Mean Relative Humidity (%)
5-May-04	Cloudy	22.2	0.5	78
6-May-04	Cloudy – Fine	24.1	0.5	82
11-May-04	Sunny	27.2	0.5	86
12-May-04	Fine	28.0	0.5	81
17-May-04	Fine	26.4	0.5	75
18-May-04	Cloudy	25.7	0.5	82
21-May-04	Cloudy	23.4	0.5	90
24-May-04	Sunny	26.4	0.5	73
27-May-04	Fine	28.5	0.5	80
28-May-04	Fine	28.4	0.5	81

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.

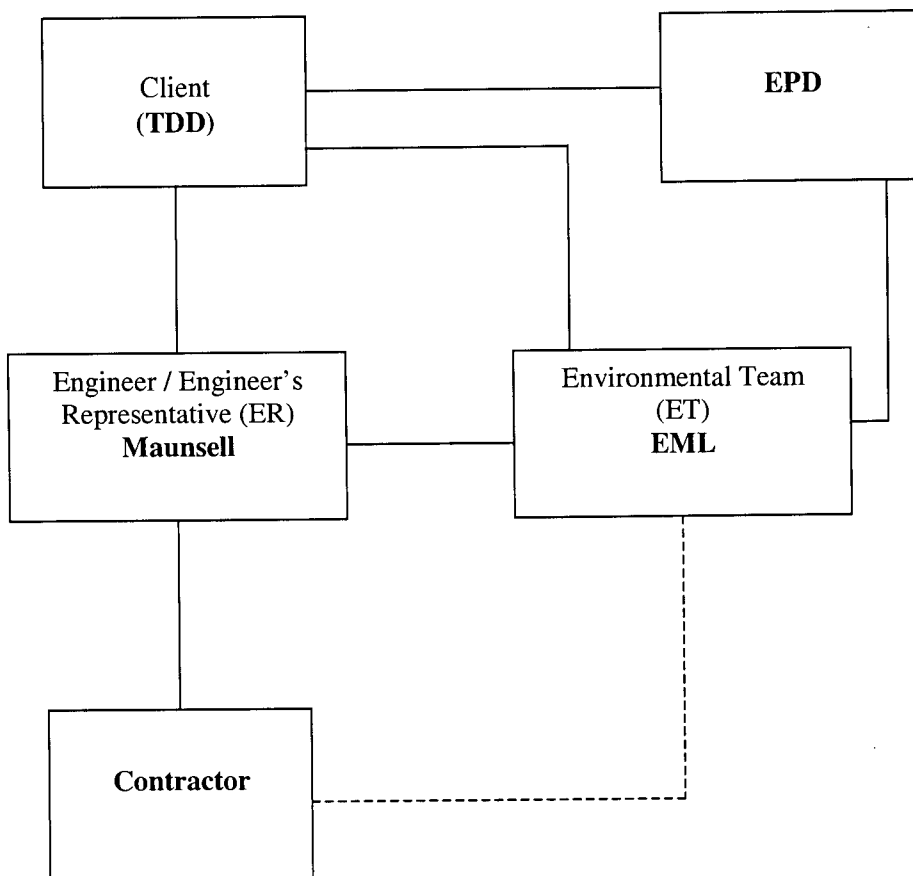
Event / Action Plan for Construction Noise

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 Organization 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. K.K. Law	2301-1397	2739-0076
Maunsell Consultants Asia Ltd. (MCAL)	Engineer	Mr. Conrad Ng	2685-6107	2691-2649
Environmental Management Ltd. (EML)	Environmental Team	Mr. W. K. Ng	2839-2800	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	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"> 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, had been 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. 	The complaint was considered as ad hoc rather than continuous. It was therefore considered not necessary to increase the noise monitoring frequency File Closed.
C02-N2	Night-time, 7 May, 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 May 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, had 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. 	File Closed.

APPENDIX J:

**Updated Construction
Program**

MASTER PROGRAMME (ST77/01/MP/13B)

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	Finish	2004												2005	
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
664	18.4 Section III Completion	0 days	Wed 12/12/01	Wed 12/12/01														



Task
Task Progress
Critical Task

Critical Task Progress
Milestone
Summary

Rolled Up Task
Rolled Up Critical Task
Rolled Up Milestone

Rolled Up Progress
Split
External Tasks

Project Summary

Date: 18/10/2003