MTR Corporation Limited

MTR Lai Chi Kok Station Pedestrian Subway and Entrance Works

Monthly Environmental Monitoring & Audit Report

16 June 2010 – 15 July 2010

Environmental Pioneers & Solutions Limited
8/F, Chaiwan Industrial Centre Building
20 Lee Chung Street, Chaiwan, Hong Kong
Tel: 2889 0569 Fax: 2856 2010

APPROVAL SHEET

Prepared and Certified by: ET Leader (Environmental Pioneers & Solutions Limited)

Signature: _____ Date: 04 AUG 2010

Miss Patricia Chung
(ET Leader)

* ET – Environmental Team

MTR Lai Chi Kok Station
Cheung Lai Street Pedestrian Subway & Entrance Works

Submission Document Title: Environmental Permit Conditions - Monthly EM&A Report

Environmental Permit No.: EP-253/ 2006
Independent Environmental Checker Ref: EP2532006-LCK-IEC-037

According to Permit Condition 1.9 of the above Environmental Permit, the titled document(s) certified by the Environmental Team Leader has been checked and verified by the undersigned.. The document is considered to be in environmental acceptable manner.

Verified by:

Glenn Frommer

Dr. Glenn H Frommer
Head of Sustainability Development of MTR Corporation

04 AUG 2010

Date

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This is the 35th Monthly Environmental Monitoring and Audit (EM&A) Report for "MTRC Lai Chi Kok Station Pedestrian Subway and Entrance Works". The Report concludes the impact monitoring and audit works for the construction works undertaken during the period of 16 June 2010 to 15 July 2010. The major construction activities in this reporting month include construction of subway box and escalator at Entrance D3, station entrance installation at Entrance D4, road reinstatement and utility works at Cheung Lai Street and Lai Chi Kok Road West and E&M works inside the completed subway box sections.. Noise impact monitoring for construction maintained and conducted at the agreed NSRs with no exceedance recorded. The Contractor's performance on environmental issues was considered to be satisfactory in general.

The project construction programme as shown on Section 2.1 has been extended to suit progress of the project works due to longer time taken for the utility diversion works and resolving site constraints.

1 INTRODUCTION

This is the 35th Monthly Environmental Monitoring and Audit (EM&A) Report for "MTRC Lai Chi Kok Station Pedestrian Subway and Entrance Works" (Environmental Permit No. EP-253/2006). The Report concludes the impact monitoring and audit works for the construction works undertaken during the period of 16 June 2010 to 15 July 2010.

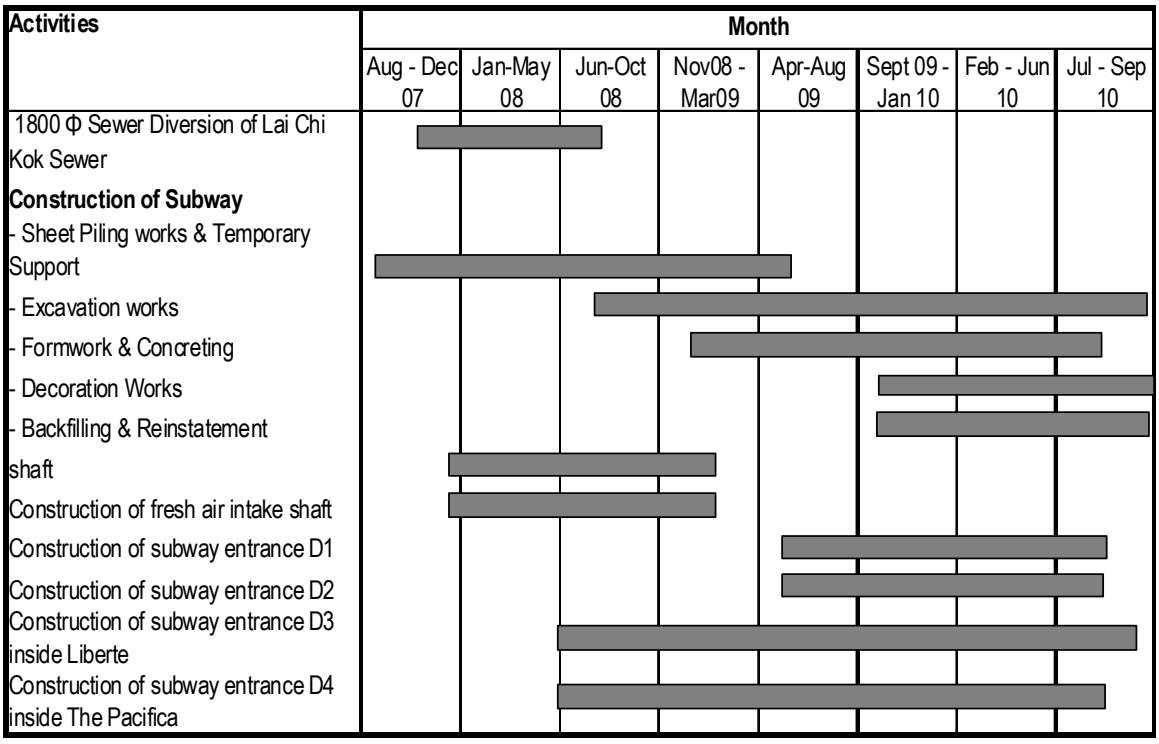
2 PROJECT INFORMATION

2.1 Construction Program

Civil construction of the whole subway would take approximately 38 months to complete. The construction sites are mainly located at Cheung Lai Street, a section of Lai Chi Kok road near West Kowloon Corridor and a section of Cheung Sha Wan Road. The overall construction works of the project are currently on progress.

Construction of the subway would be carried out simultaneously by cut and cover method. Vertical open cut areas would be provided in phases to suit the project progress and laterally supported by sheetpile walls for temporary road decks construction. In order to maintain existing traffic flows at Lai Chi Kok Road, Cheung Sha Wan Road and Cheung Lai Street, temporary road decks would be provided as soon as possible. This would also act as a screen to minimize the nuisance to the public and pedestrian during construction of the subway structures. All excavation and construction of the subway and its ancillary underground structures would be carried out underneath the road decks thereby minimizing environmental impacts. At-grade access points would be provided for transportation of material/spoil and workers' access during implementation of the underground subway construction works. Once the construction of the subway structure is completed, the work areas would be backfilled and the road surface for the temporary works sites will be reinstated.

As advised by RE, the following construction programme has been revised to suit the current progress of the project works due to longer time taken for the utility diversion works and resolving site constraints. Site location plan is shown in Appendix 1.



2.2 Construction Activities in the Past Month

Major construction activities carried out by the contractor during this reporting period include:

Site under West Kowloon Corridor

- Backfilling to completed subway sections;
- Construction of connection portion to Liberte;
- E&M installation inside completed subway sections

Site under Lai Chi Kok Road Westbound

- Construction of the subway box sections;
- Utility reinstatement works.

Site at Cheung Lai Street

- Backfilling and road reinstallation by phases;
- E&M works inside subway box sections.

Site at Entrance D3

- Concreting the accessible landings and lift shafts;
- Provisioning connection between Liberte and completed subway boxes. .

Site at Entrance D4

- Construction of the accessible staircases and entrance.

2.3 Construction Activities for the Coming Month

Major construction activities by the contractor anticipated for the coming month include:

Site under West Kowloon Corridor

- Continue backfilling to completed subway boxes;
- Construction of connection portion to Liberte;
- Continue E&M installation inside completed subway sections.

Lai Chi Kok Road Westbound

- Continue backfilling works and utility reinstatement works:
- Commence of E&M works inside completed subway boxex...

Site at Cheung Lai Street

- Continue backfilling and road reinstallation by phases;
- Continue E&M works inside completed subway boxes.

Site at Entrance D3

- Continue concreting the accessible landings and lift shafts;
- Continue construction of connection between Liberte and completed subway boxes. .

Site at Entrance D4

- Continue construction of station entrance

.

3 NOISE MONITORING

3.1 Monitoring Methodology

In accordance with the EM&A Manual, the construction noise level is measured in terms of A-weighted equivalent continuous sound pressure level (L_{Aeq}). During normal construction working hours (0700-1900 Monday to Saturday), monitoring of $L_{Aeq, 30min}$ noise levels (as six consecutive $L_{Aeq, 5min}$ readings) was carried out once every week.

3.2 Equipment Used and Calibration Details

Impact noise monitoring was conducted using SVAN sound analysis equipment – SVAN 949, which complied with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1 985 (Type 1) Specifications as referred to in the Technical Memorandum to the Noise Control Ordinance. The equipment were calibrated and verified by certified laboratory or manufacturer every two years to ensure they perform to the same level of accuracy as stated in the manufacturer's specification. Before and after each measurement, the reading of sound level meter was checked with the acoustic calibrator and the measurements were accepted as valid if the calibration levels before and after the noise measurement agreed to within 1.0 dB. Free field and weatherproof microphone was extended 1m from the exterior of the sensitive receivers building façade and with an unobstructed field of view of the proposed construction site. Measurements were recorded to the nearest 0.1 dB.

3.3 Monitoring Station

In accordance with the EM&A Manual, monitoring stations were established at 2 locations, which are summarized in Table 3.1 and depicted in Appendix 1.

Table 3.1 – Noise Monitoring Stations

Sensitive Receiver No.	Location
R1	Podium, Block 7, Liberte
R2	Podium, Tower 1, The Pacifica

3.4 Monitoring Results

The results are presented in the Table 3.2. Relevant details of the noise monitoring results, graphic plots calculation references are presented in Appendix 2 and 3. The corrected LAeq results, ranged between 63.6 dB(A) and 73.4 dB(A), were within the limit levels and therefore, no exceedance was found.

Table 3.2 – Noise monitoring results for the reporting month

Location	Parameter	Time	Date	Measured Leq	Baseline Noise Level	Corrected LAeq*	Limit	Exceedance
R1	Leq30min	11:11	21-Jun-10	73.4 dB(A)	74 dB(A)	# dB(A)	75 dB(A)	N
R1	Leq30min	10:10	28-Jun-10	74.4 dB(A)	74 dB(A)	65.5 dB(A)	75 dB(A)	N
R1	Leq30min	10:33	6-Jul-10	73.1 dB(A)	74 dB(A)	# dB(A)	75 dB(A)	N
R1	Leq30min	10:31	13-Jul-10	74.4 dB(A)	74 dB(A)	65.5 dB(A)	75 dB(A)	N
R2	Leq30min	10:34	21-Jun-10	76.2 dB(A)	74.3 dB(A)	71.7 dB(A)	75 dB(A)	N
R2	Leq30min	9:38	28-Jun-10	75.2 dB(A)	74.3 dB(A)	67.9 dB(A)	75 dB(A)	N
R2	Leq30min	9:51	6-Jul-10	73.2 dB(A)	74.3 dB(A)	# dB(A)	75 dB(A)	N
R2	Leq30min	9:58	13-Jul-10	76.8 dB(A)	74.3 dB(A)	73.2 dB(A)	75 dB(A)	N

***Corrected to baseline background level**

 # Measured Leq is lower than baseline noise measurement

Action and Limit levels and the associated Event/Action Plan in event of exceedence are summarized in Table 3.3 and 3.4, respectively.

Table 3.3 – Action and Limit Levels for Construction Noise at Sensitive Receivers R1 and R2

Time Period	Action	Limit
Daytime 0700 – 1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)
0700 – 2300hrs on holidays; and 1900 – 2300 hrs on all other days		Subject to the control of Noise Control Ordinance
2300 – 0700 hrs of next day		Subject to the control of Noise Control Ordinance

Table 3.4 - Event/Action plan for construction noise

Event	Action			
	ET Leader	**IEC**	**RE**	**Contractor**
Action Level	1. Notify IEC, RE and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC,RE and the Contractor. 4. Discuss with the RE and the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation measures.	1. Review with analysed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise RE accordingly. 3. Supervise the implement of remedial measures.	1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to RE / ET. 2. Implement noise mitigation proposals.
Limit Level	1. Identify the source. 2. Notify IEC, RE, EPD and the Contractor. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform IEC, RE, and EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and RE informed of the results. 8. If exceedance stops, cease additional monitoring	1. Discuss amongst RE, ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise RE accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to RE and IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the RE until the exceedance is abated.

3.5 Monitoring Schedule for Next Reporting Period

Noise monitoring in the next reporting period is scheduled for 20th and 29th July and 4th and 12th August 2010.

Site inspection schedule for the next reporting period is designated on 28th July and 11th August 2010.

4 ACTION TAKEN IN EVENT OF EXCEEDENCE

There were no exceedance recorded during this reporting period, therefore no actions were taken.

5 CONSTRUCTION WASTE DISPOSAL

Dumping locations for disposal of C&D wastes from the construction site were appointed and allocated by EPD/CEDD. The contractor has implemented the delivery trip ticket system for recording the waste disposal to the public fill and landfill areas. Excavated materials are reused as back-fill material to balance cut and fill and hence reduce the generation of materials. Table 5.1 is a summary of updated figures of the construction wastes disposal provided by the Contractor. The relevant disposal records are kept in Contractor's site office for inspection.

Table 5.1 Summary of Construction Waste Disposal

	Amount of Construction Waste disposed		
	Inert Waste (to Public Fill) (tonnes)	**Non-inert Waste (to Landfill) (tonnes)**	**Chemical Waste (trip) (tonnes)**
16 August 07 to 15 May 08	5642.79	0	0.4
16 May 08 to 15 February 09	12526.15	16.00	1
16 February 09 to 15 March 09	3871.40	0	0
16 March 09 to 15 April 09	5603.90	3.00	0.4
16 April 09 to 15 May 09	3354.90	6.50	0
16 May 09 to 15 June 09	4182.60	2.70	0
16 June 09 to 15 July 09	5594.20	9.50	--
16 July 09 to 15 August 09	5667.33	4.45	0
16 August 09 to 15 September 09	1300.50	12.90	0
16 September 09 to 15 October 09	2442.80	32.00	0
16 October 09 to 15 November 09	0.00	145.00	0
16 November 09 to 15 December 09	0.00	140.00	0
16 December 09 to 15 January 10	0.00	29.00	0
16 January 10 to 15 February 10	0.00	81.00	0
16 February 10 to 15 March 10	0.00	267.00	0
16 March 10 to 15 April 10	0.00	106.00	0
16 April 10 to 15 May 10	0.00	31.00	0
16 May 10 to 15 June 10	0.00	106.00	0
16 June 10 to 15 July 10	0.00	33.00	0
Total	50186.57	886.05	1.80

6 COMPLAINT LOG

Table 6.1 Summary of Formal Complaints received

	Air	Noise	Water	Others
16 August 07 to 15 May 07	1	1	0	0
16 May 08 to 15 February 09	2	0	0	0
16 February 09 to 15 March 09	0	0	0	0
16 March 09 to 15 April 09	0	1	0	0
16 April 09 to 15 May 09	0	0	0	0
16 May 09 to 15 June 09	0	0	0	0
16 June 09 to 15 July 09	0	0	0	0
16 July 09 to 15 August 09	0	0	0	0
16 August 09 to 15 September 09	0	0	0	0
16 September 09 to 15 October 09	0	0	0	0
16 October 09 to 15 November 09	0	0	0	0
16 November 09 to 15 December 09	0	0	0	0
16 December 09 to 15 January 10	0	0	0	0
16 January 10 to 15 February 10	0	0	0	0
16 February 10 to 15 March 10	0	0	0	0
16 March 10 to 15 April 10	0	0	0	0
16 April 10 to 15 May 10	0	0	0	0
16 May 10 to 15 June 10	0	0	0	0
16 June 10 to 15 July 10	0	0	0	0
Total	3	2	0	0

7 STATUS OF PERMITS AND LICENSES OBTAINED

Table 7.1 is the updated status of environmental related permits/ license obtained for the construction activities. Construction Noise Permit is renewed in the reporting month.

Table 7.1 Status of Permits and Licenses Obtained

Description	License / Permit No.#	Date of Issue	Date of Expiry	Remarks
Environmental Permit	EP-253/2006	11 Aug 2006	--	
Registration of C&D Waste Producer	7005542	1 Jun 2007	--	
Chemical Waste Producer	5214-264-K2869-08	08-May 2007	--	
Construction Noise Permit	GW-RW0093-10	9 March 2010	8 September 2010	
Effluent Discharge License	EP760/264/0124051	24 July 2007	31 July 2012	

8 SITE INSPECTION AND AUDITS

During the reporting period, regular bi-weekly joint site inspections led by senior staffs from MTR, Residential Engineer, Contractor and the ET were carried out. The Contractor's performance on the environmental matters was assessed and concerned items were raised for rectification. Inspection findings from the reporting period are summarized as follows:

Table 8.1 Summary of inspection findings

Item	Observations/ Description	Status
1	The Contractor was reminded to have regular check on site to ensure the compliance of relevant environmental regulations, permits and licenses.	Ongoing
2	The Contractor was reminded to ensure all required construction noise mitigation measures to be followed properly.	Ongoing
3	The Contractor was reminded to keep the site works area and site office tidy as good housekeeping to an acceptable standard, particularly inside the completed subway box sections.	The Contractor still need to pay attention on site housekeeping.
4	The Contractor was reminded to implement proper noise mitigation measures to shield the noise parts of circular saw, handheld breaker and vibratory hammer during construction.	Ongoing
5	The Contractor should regularly review the condition of hoardings or equivalent approved for Cheung Lai Street site area. In order to reduce any air pollution impact to the nearby public.	Ongoing
6	The Contractor was reminded to have regular view on potential oil leak from fuel containers and the stationery plants on site by providing proper drip trays or similar.	Ongoing
7	The Contractor was reminded to have regular check on the potential black smoke from working plants.	Ongoing
8	The Contractor should implement properly required dust mitigation measures at the progressing work sites..	Ongoing
9	The Contactor should regularly check any ponding site water in order to prevent mosquito breeding problems and working condition of the working de-silting tanks.	The Contractor still need to pay attention on site ponding water

9 CONCLUSION

In this reporting month, construction activities for this project “MTRC Lai Chi Kok Station Pedestrian Subway and Entrance Works” include backfilling and utility reinstatement under West Kowloon Corridor and Lai Chi Kok Road Westbound; the backfilling, road reinstatements and E&M installation of the completed subway boxes under Cheung Lai Street; construction of station entrances at the Liberta and Pacifica. Regular monthly meetings and weekly site audits, led by the seniors and attended by representatives of RE, ET, IEC and the Contractor, were held for discussing site environmental related issues. Concerned site environmental items raised during the audits were generally followed up by the Contractor for rectification. The overall environmental pollution control measures provided by the Contractor were considered satisfactory. Noise levels recorded during the monitoring period were within limits. The ET will continue to execute the environmental monitoring and audit programme in accordance with the EM&A Manual and Environmental Permit requirements.

APPENDIX 1 – REFERENCE FIGURES

Figure 1 Project Construction Area

Figure 2 Noise Monitoring Stations

Figure 1 Project Construction Area

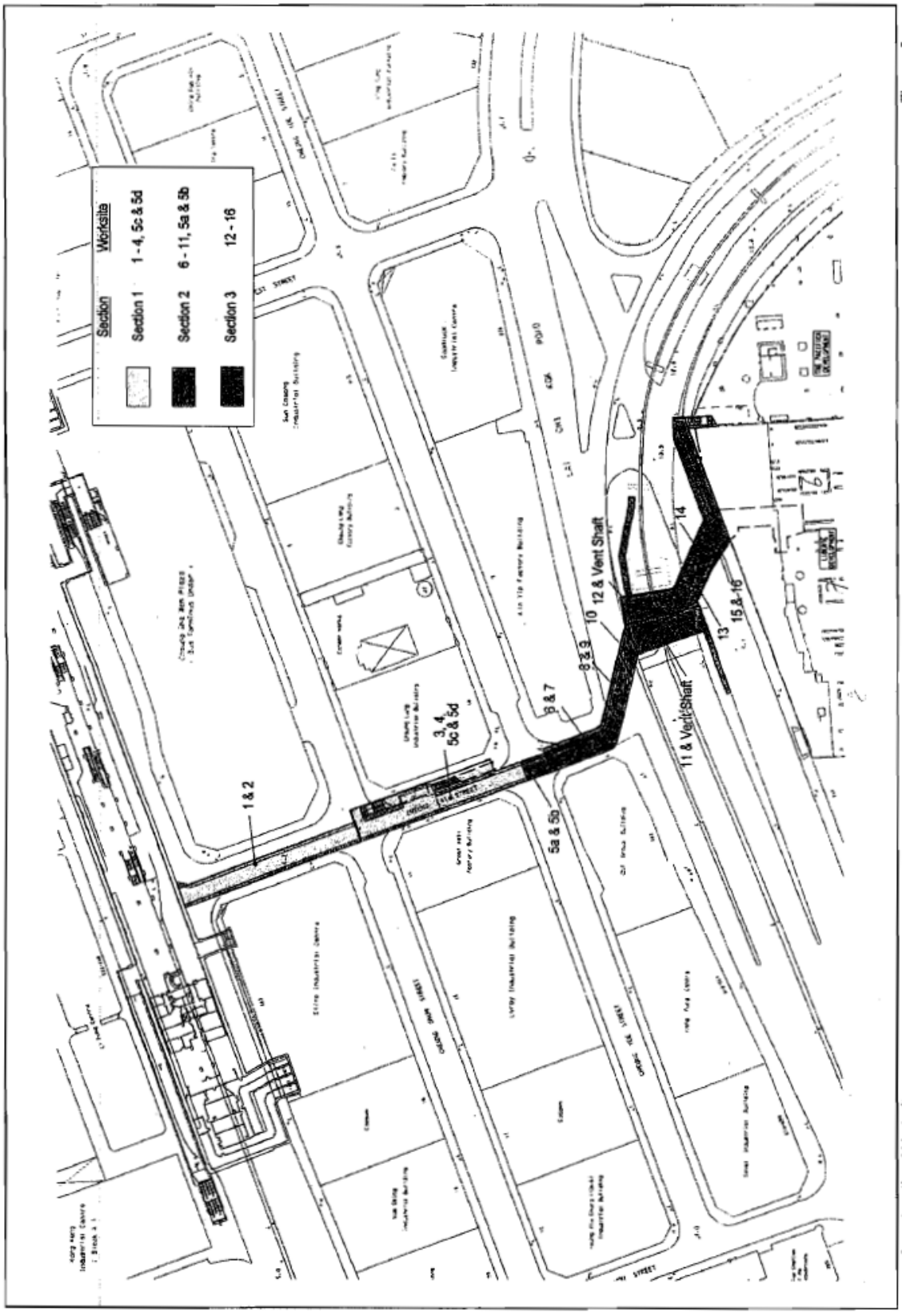


Figure 2 Noise Monitoring Stations R1 and R2

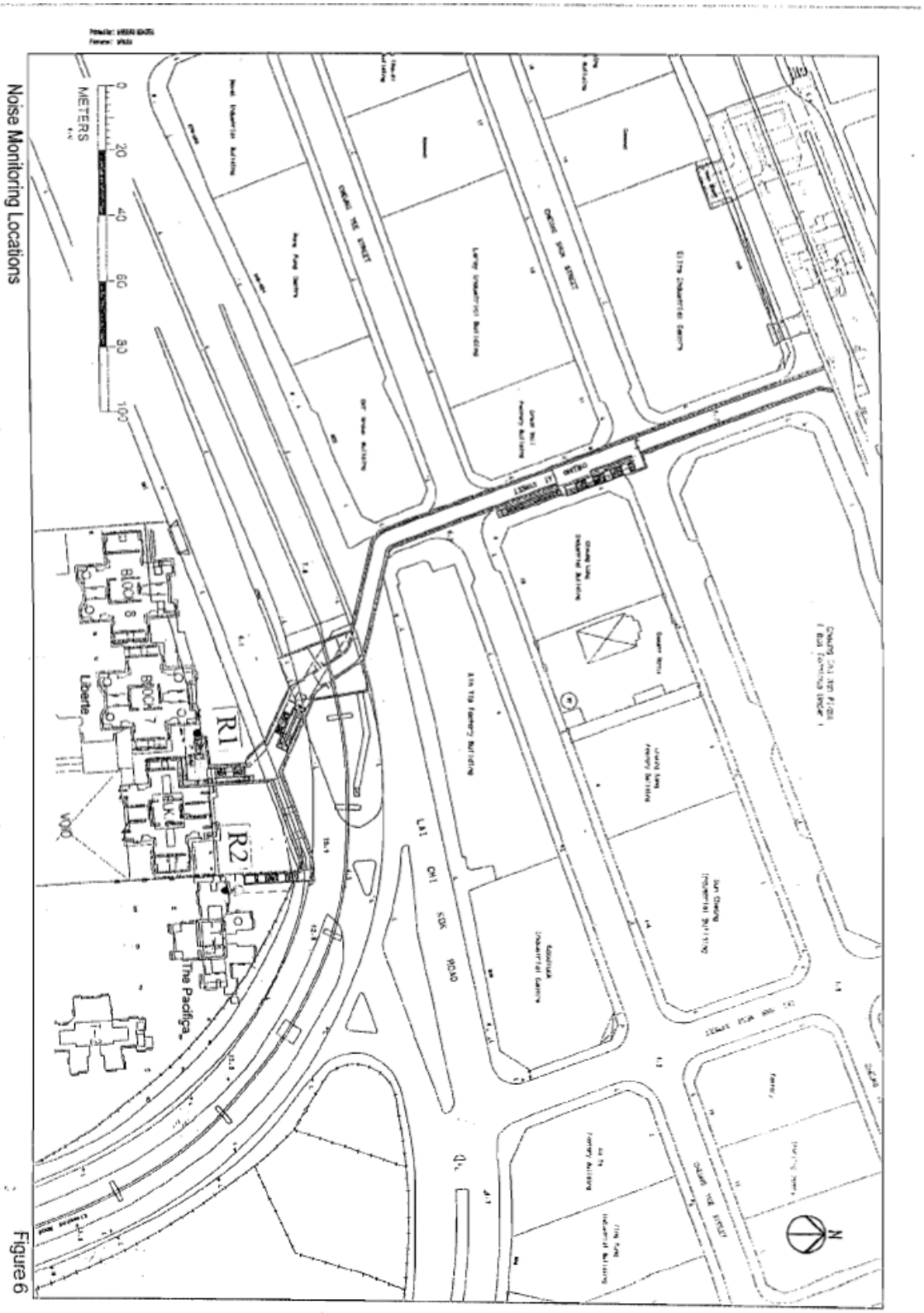
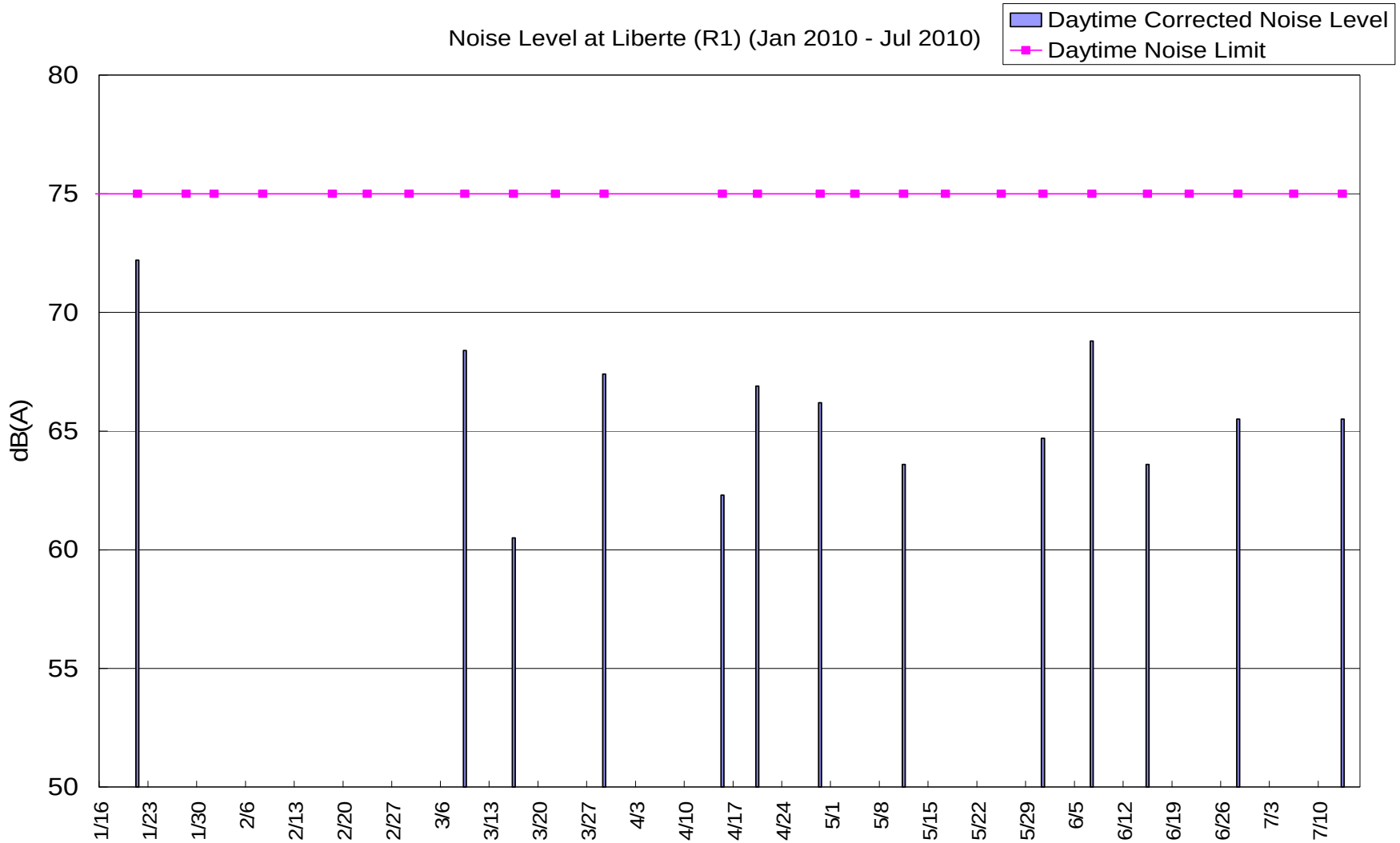
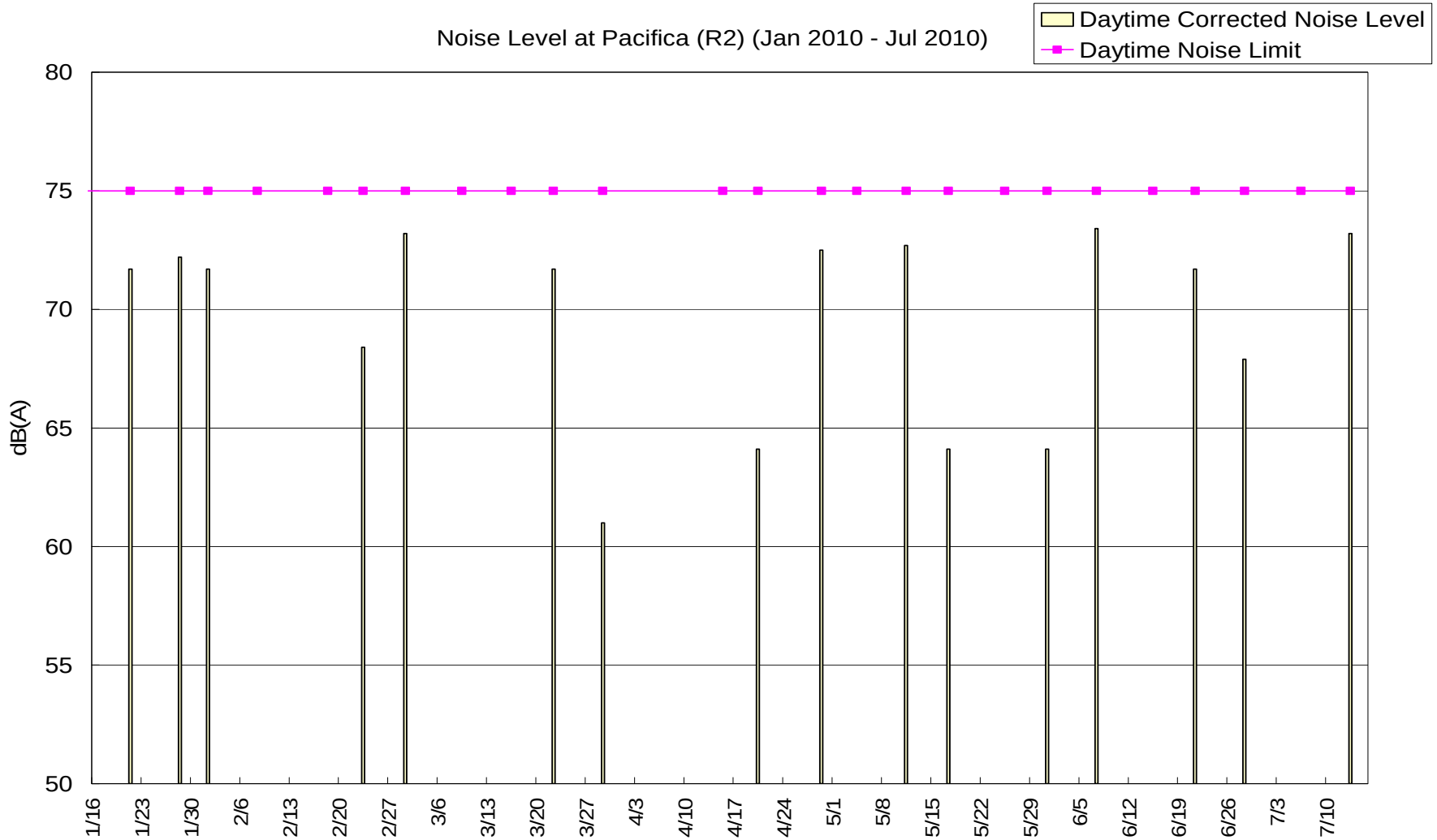


Figure 6

APPENDIX 2 – Environmental Monitoring Data / Charts


Noise Level at Liberte (R1) (Jan 2010 - Jul 2010)
Daytime Corrected Noise Level
Daytime Noise Limit
dB(A)
80
75
70
65
60
55
50
1/16
1/23
1/30
2/6
2/13
2/20
2/27
3/6
3/13
3/20
3/27
4/3
4/10
4/17
4/24
5/1
5/8
5/15
5/22
5/29
6/5
6/12
6/19
6/26
7/3
7/10


Noise Level at Pacifica (R2) (Jan 2010 - Jul 2010)
Daytime Corrected Noise Level
Daytime Noise Limit
dB(A)
80
75
70
65
60
55
50
1/16
1/23
1/30
2/6
2/13
2/20
2/27
3/6
3/13
3/20
3/27
4/3
4/10
4/17
4/24
5/1
5/8
5/15
5/22
5/29
6/5
6/12
6/19
6/26
7/3
7/10

APPENDIX 3 – Noise Monitoring Data Sheet and Calculation

Calculations and Equations:

The 30minutes A-weighted equivalent continuous sound pressure level ($L_{Aeq, 30min}$) is calculated by geometric mean from 6 consecutive $L_{Aeq, 5min}$ readings:

$$L_{Aeq, 30min} = 6^{th} \text{ root of } (L1)(L2)\ldots(L6)$$

Where: L1~6 is the 6consecutive $L_{Aeq, 5min}$ readings

And the equation of the Baseline correction:

$$10\log (10^{Laeq/10}-10^{Lb/10})$$

Where:
L_{aeq} is the $L_{Aeq, 30min}$ from the geometric mean of 6 consecutive L_{eq5min} results
Lb is the baseline noise level.

Mass Transit Railway - Lai Chi Kok Station
Cheung Lai Street Pedestrian Subway and Entrance Works

Noise Level Monitoring Log Sheet

Monitoring Location		Podium, Block 7, Liberte
Sampling Date		13 July 2010
Sampling Time		10:31 - 11:01
Weather Condition		Overcast
Baseline Noise Level	**dB(A)**	73.8
Monitoring Results	**L_{eq}, dB(A)**	74.4
	L_{10}, dB(A)	76.1
	L_{90}, dB(A)	73.1
Calibration before Measurement	**dB(A)**	94.0
Calibration after Measurement	**dB(A)**	94.0
Observation(s) Hammering noise by (Hammer x 1) Transportation noise by public transporation		
Remarks		
N/A		

With Baseline Correction : **65.5** **dB(A)**

#Note: The measurement noise level is lower than the baseline noise level
Therefore, no baseline correction is calculated.

Recorded by : William Law **Date : 13 July 2010**

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____dBA Weather: Cloudy Recorded by: WILLIAM LOW

Date	Location	Time/H Duration Min.	Comment/Source	L_{max}	L_{min}	L_{10}	L_{90}	L_{Aeq}
18/7/2010 R1	R1 Liberte	10:31-10:36		79.30	71.90	76.10	73.40	74.40
		10:36-10:41		84.40	71.30	75.40	72.80	73.40
		10:41-10:46		81.10	71.60	76.40	73.00	75.00
		10:46-10:51		80.60	71.20	76.10	73.10	74.60
		10:51-10:56		79.60	71.30	76.20	73.00	74.40
		10:56-11:01		80.00	71.20	76.20	73.20	74.60

L_{10} 30min = 76.60
L_{90} 30min = 73.10
L_{eq} 30min = 74.40

Mass Transit Railway - Lai Chi Kok Station
Cheung Lai Street Pedestrian Subway and Entrance Works

Noise Level Monitoring Log Sheet

Monitoring Location		Podium, Tower 1, The Pacifica
Sampling Date		13 July 2010
Sampling Time		09:58 - 10:28
Weather Condition		Overcast
Baseline Noise Level	**dB(A)**	74.3
Monitoring Results	**L_{eq}, dB(A)**	76.8
	L_{10}, dB(A)	78.1
	L_{90}, dB(A)	75.0
Calibration before Measurement	**dB(A)**	94.0
Calibration after Measurement	**dB(A)**	94.0
Observation(s) Hammering noise by (Hammer x 1) Transportation noise by public transporation		
Remarks		

With Baseline Correction : **73.2** **dB(A)**

Note: The measurement level is lower than the baseline noise level.
Therefore, no baseline correction is calculated

Recorded by : William Law **Date : 13 July 2010**

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: Cloudy Recorded by: Wilson Chan

Date	Location	Time/H Duration Min.	Comment/Source	L_{max}	L_{min}	L_{10}	L_{90}	L_{Acq}
13/7/2010	R2 Portion	09:58 - 10:03		82.50	70.60	78.10	74.80	76.60
		10:03 - 10:08		89.50	73.90	78.30	75.30	77.00
		10:08 - 10:13		84.30	73.90	78.10	75.00	76.80
		10:13 - 10:18		82.40	73.80	77.30	75.40	76.50
		10:18 - 10:23		88.40	74.10	78.50	75.00	77.30
		10:23 - 10:28		89.60	70.80	78.00	74.60	76.70

$L_{10\ 30min}$ = 78.10
$L_{90\ 30min}$ = 75.00
$L_{eq\ 30min}$ = 76.80

Mass Transit Railway - Lai Chi Kok Station
Cheung Lai Street Pedestrian Subway and Entrance Works

Noise Level Monitoring Log Sheet

Monitoring Location		Podium, Block 7, Liberte
Sampling Date		6 July 2010
Sampling Time		10:33 - 11:03
Weather Condition		Overcast
Baseline Noise Level	**dB(A)**	73.8
Monitoring Results	**L_{eq}, dB(A)**	73.1
	L_{10}, dB(A)	74.8
	L_{90}, dB(A)	71.0
Calibration before Measurement	**dB(A)**	94.0
Calibration after Measurement	**dB(A)**	94.0
Observation(s) Hammering noise by (Hammer x 1) Transportation noise by public transporation		
Remarks		
N/A		

With Baseline Correction : **#Note** **dB(A)**

#Note: The measurement noise level is lower than the baseline noise level
Therefore, no baseline correction is calculated.

Recorded by : William Law **Date : 6 July 2010**

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: Cloudy Recorded by: William Law

Date	Location	Time/H Duration Min.	Comment/Source	L_{max}	L_{min}	L_{10}	L_{90}	L_{Aeq}
6/7/2010	R1 Khana	10:33 - 10:38		76.00	67.40	74.20	70.40	72.50
		10:38 - 10:43		74.50	68.30	74.30	70.70	72.80
		10:43 - 10:48		78.10	67.50	74.50	71.20	73.00
		10:48 - 10:53		74.90	67.50	74.80	70.30	72.70
		10:53 - 10:58		78.40	70.10	75.20	71.80	73.70
		10:58 - 11:03		74.90	71.10	75.80	71.80	74.10

L_{10} 30min = 74.80
L_{90} 30min = 71.00
L_{eq} 30min = 73.10

Mass Transit Railway - Lai Chi Kok Station
Cheung Lai Street Pedestrian Subway and Entrance Works

Noise Level Monitoring Log Sheet

Monitoring Location		Podium, Tower 1, The Pacifica
Sampling Date		6 July 2010
Sampling Time		09:51 - 10:21
Weather Condition		Overcast
Baseline Noise Level	**dB(A)**	74.3
Monitoring Results	**L_{eq}, dB(A)**	73.2
	L_{10}, dB(A)	74.8
	L_{90}, dB(A)	71.1
Calibration before Measurement	**dB(A)**	94.0
Calibration after Measurement	**dB(A)**	94.0
Observation(s) Hammering noise by (Hammer x 1) Transportation noise by public transporation		
Remarks		

With Baseline Correction : **#Note** **dB(A)**

Note: The measurement level is lower than the baseline noise level.
Therefore, no baseline correction is calculated

Recorded by : William Law **Date : 6 July 2010**

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____dBA Weather: Cloudy Recorded by: WILLIAM LAW

Date	Location	Time/H Duration Min.	Comment/Source	L_{max}	L_{min}	L_{10}	L_{90}	L_{Acq}
6/7/2010	R2 Pacifica	09:51-09:56		84.00	69.80	75.50	71.60	73.80
		09:56-10:01		82.30	69.90	75.60	71.50	73.60
		10:01-10:06		81.20	68.60	75.00	71.70	73.50
		10:06-10:11		85.00	68.80	74.40	70.50	72.80
		10:11-10:16		80.80	67.30	74.90	70.50	73.00
		10:16-10:21		77.60	67.90	74.10	70.60	72.60

L_{10} 30min = 74.80

L_{90} 30min = 71.10

L_{eq} 30min = 73.20

Mass Transit Railway - Lai Chi Kok Station
Cheung Lai Street Pedestrian Subway and Entrance Works

Noise Level Monitoring Log Sheet

Monitoring Location		Podium, Block 7, Liberte
Sampling Date		28 June 2010
Sampling Time		10:10 - 10:40
Weather Condition		Overcast
Baseline Noise Level	**dB(A)**	73.8
Monitoring Results	**L_{eq}, dB(A)**	74.4
	L_{10}, dB(A)	75.6
	L_{90}, dB(A)	72.8
Calibration before Measurement	**dB(A)**	94.0
Calibration after Measurement	**dB(A)**	94.0
Observation(s) Hammering noise by (Hammer x 1) Transportation noise by public transporation		

Remarks
N/A

With Baseline Correction : **65.5** **dB(A)**

#Note: The measurement noise level is lower than the baseline noise level
Therefore, no baseline correction is calculated.

Recorded by : William Law **Date : 28 June 2010**

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: Cloudy Recorded by: William Law

Date	Location	Time/H Duration Min.	Comment/Source	L_{max}	L_{min}	L_{10}	L_{90}	L_{Aeq}
28/6/2010	R1 (Above)	10:10 - 10:15		74.50	72.30	74.40	72.60	73.40
		10:15 - 10:20		88.00	69.50	76.20	73.00	75.00
		10:20 - 10:25		88.70	71.40	76.20	73.00	74.90
		10:25 - 10:30		78.80	71.20	75.80	72.80	74.40
		10:30 - 10:35		79.60	71.60	75.80	72.80	74.20
		10:35 - 10:40		85.40	70.80	75.70	72.80	74.40

$L_{10\ 30min} = 75.60$

$L_{90\ 30min} = 72.80$

$L_{eq\ 30min} = 74.40$

Mass Transit Railway - Lai Chi Kok Station
Cheung Lai Street Pedestrian Subway and Entrance Works

Noise Level Monitoring Log Sheet

Monitoring Location		Podium, Tower 1, The Pacifica
Sampling Date		28 June 2010
Sampling Time		09:38 - 10:08
Weather Condition		Overcast
Baseline Noise Level	**dB(A)**	74.3
Monitoring Results	**L_{eq}, dB(A)**	75.2
	L_{10}, dB(A)	76.1
	L_{90}, dB(A)	73.2
Calibration before Measurement	**dB(A)**	94.0
Calibration after Measurement	**dB(A)**	94.0
Observation(s) Hammering noise by (Hammer x 1) Transportation noise by public transporation		
Remarks		

With Baseline Correction : **67.9** **dB(A)**

Note: The measurement level is lower than the baseline noise level.
Therefore, no baseline correction is calculated

Recorded by : William Law **Date : 28 June 2010**

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____dBA Weather: Cloudy Recorded by: WILLIAM LAW

Date	Location	Time/H Duration Min.	Comment/Source	L_{max}	L_{min}	L_{10}	L_{90}	L_{Acq}
28/4/2010	R2 Pacific	09:38 - 09:43		97.30	68.90	76.40	73.20	77.30
		09:43 - 09:48		78.60	71.40	76.20	73.00	74.70
		09:48 - 09:53		79.60	72.00	76.10	73.50	74.80
		09:53 - 09:58		~~75.60~~ 78.30	71.80	75.40	72.90	74.30
		09:58 - 10:03		81.10	71.60	76.30	73.30	75.10
		10:03 - 10:08		78.10	72.00	76.30	73.10	74.80

L_{10} 30 min = 76.10

L_{90} 30 min = 73.20

L_{eq} 30 min = 75.20

Mass Transit Railway - Lai Chi Kok Station
Cheung Lai Street Pedestrian Subway and Entrance Works

Noise Level Monitoring Log Sheet

Monitoring Location		Podium, Block 7, Liberte
Sampling Date		21 June 2010
Sampling Time		11:11 - 11:41
Weather Condition		Overcast
Baseline Noise Level	**dB(A)**	73.8
Monitoring Results	**L_{eq}, dB(A)**	73.4
	L_{10}, dB(A)	74.7
	L_{90}, dB(A)	71.9
Calibration before Measurement	**dB(A)**	94.0
Calibration after Measurement	**dB(A)**	94.0
Observation(s) Hammering noise by (Hammer x 1) Transportation noise by public transporation		
Remarks		
N/A		

With Baseline Correction : **#Note** **dB(A)**

#Note: The measurement noise level is lower than the baseline noise level
Therefore, no baseline correction is calculated.

Recorded by : William Law **Date : 21 June 2010**

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: Cloudy Recorded by: William Lau

Date	Location	Time/H Duration Min.	Comment/Source	L_{max}	L_{min}	L_{10}	L_{90}	L_{Acq}
25/6/2010	R. Liberte	11:11 - 11:16		76.60	70.60	74.90	72.20	73.70
		11:16 - 11:21		80.70	70.60	74.80	72.00	73.50
		11:21 - 11:26		77.50	69.80	74.40	71.70	73.20
		11:26 - 11:31		78.90	70.90	75.10	72.00	73.60
		11:31 - 11:36		76.00	70.70	74.70	72.00	73.50
		11:36 - 11:41		78.90	70.30	74.40	71.80	73.20

L_{10} 30min = 74.70

L_{90} 30min = 71.90

L_{eq} 30min = 73.40

Mass Transit Railway - Lai Chi Kok Station
Cheung Lai Street Pedestrian Subway and Entrance Works

Noise Level Monitoring Log Sheet

Monitoring Location		Podium, Tower 1, The Pacifica
Sampling Date		21 June 2010
Sampling Time		10:34 - 11:04
Weather Condition		Overcast
Baseline Noise Level	**dB(A)**	74.3
Monitoring Results	**L_{eq}, dB(A)**	76.2
	L_{10}, dB(A)	77.7
	L_{90}, dB(A)	74.5
Calibration before Measurement	**dB(A)**	94.0
Calibration after Measurement	**dB(A)**	94.0
Observation(s) Hammering noise by (Hammer x 1) Transportation noise by public transporation		
Remarks		

With Baseline Correction : 71.7 **dB(A)**

Note: The measurement level is lower than the baseline noise level.
Therefore, no baseline correction is calculated

Recorded by : William Law **Date : 21 June 2010**

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: Cloudy Recorded by: WILLIAM CAN

Date	Location	Time/H Duration Min.	Comment/Source	L_{max}	L_{min}	L_{10}	L_{90}	L_{Aeq}
21/6/2010	R2 Position	10:34 - 10:39		80.10	69.50	77.20	74.30	75.80
		10:39 - 10:44		82.90	73.40	78.30	74.70	76.60
		10:44 - 10:49		84.80	73.50	78.10	74.80	76.50
		10:49 - 10:54		82.70	73.00	78.10	74.80	76.60
		10:54 - 10:59		82.60	73.00	77.00	74.10	75.70
		10:59 - ~~11:04~~ 10:04		80.30	72.80	77.30	74.40	75.90

L_{10} 30 min = 77.70
L_{90} 30 min = 74.50
L_{eq} 30 min = 76.20