

MTR Corporation Limited
香港鐵路有限公司
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Hong Kong Government
Environmental Protection Department Headquarters
28/F, Southorn Centre,
130 Hennessy Road,
Wan Chai, Hong Kong

Your ref :

Our ref: C/HSD/NW/F1500 (LCK)
#859778

Attention: Mr. M.W. Ho

29 August, 2008

Dear Mr Ho,

**MTR Lai Chi Kok Station Pedestrian Subway and Entrance Works
Environmental Permit No. EP-253/2006
Environmental Permit Conditions – Monthly EM&A Report**

In compliance of Environmental Permit Item 4.3, attached please find three hard copies and one electronic copy of 12th monthly EM&A Report for your reference and retention.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Glenn Frommer', is written over a light blue rectangular background.

PP Dr. Glenn Frommer
Head of Sustainability Development

Enc's.

GF/WC/bl

MTR Corporation Limited

MTR Lai Chi Kok Station Pedestrian Subway and Entrance Works

Monthly Environmental Monitoring & Audit Report

16 July 2008 – 15 August 2008

Environmental Pioneers & Solutions Limited

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

MTR Lai Chi Kok Station

Cheung Lai Street Pedestrian Subway & Entrance Works

Environmental Permit No. EP - 253/ 2006

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-015

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:


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

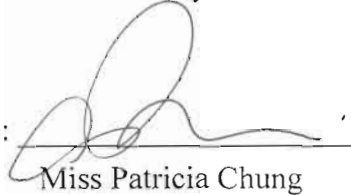
29 AUG 2008

Date

APPROVAL SHEET

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

Signature: _____



Miss Patricia Chung
(ET Leader)

Date: _____

29 AUG 2008

* ET – Environmental Team b

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EXECUTIVE SUMMARY

This is the 12th 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 July to 15 August 2008. The major construction activities in this reporting month include 1800mm dia sewer diversion works, sheetpiling and temporary support for subway construction, utility diversion works and temporary road diversion.

Impact monitoring for the construction noise impact was conducted in this reporting period. There was no exceedance of action and limit levels recorded at the agreed sensitive receivers. There were no formal public concerns or complaints on environmental issues received during this reporting period. The Contractor's performance on environmental issues was considered to be satisfactory in general.

There was a joint site inspection by the representatives from EPD, MTR, RE, Contractor and Environmental Team on July 16th 2008 with no adverse comment made. EPD have advised some recommendations on the contractor's current environmental management performance on controlling the potential impacts on noise, dust and odorous exhaust gas emission from the construction activities.

1 INTRODUCTION

This is the 12th 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 July to 15 August 2008.

2 PROJECT INFORMATION

2.1 Construction Program

Civil construction of the whole subway would take approximately 30 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.

Site location plan is shown in Appendix 1. The construction programme is shown below.

Activities	Month					
	Aug - Dec 07	Jan-May 08	Jun-Oct 08	Nov08 - Mar09	Apr-Aug 09	Sept 09 - Jan 10
1800 Ø Sewer Diversion of Lai Chi Kok Sewer	■					
Construction of Subway						
- Sheet Piling works & Temporary Support	■					
- Excavation works			■			
- Formwork & Concreting				■		
- Decoration Works					■	
- Backfilling & Reinstatement					■	
Construction of smoke extraction air shaft	■					
Construction of fresh air intake shaft	■					
Construction of subway entrance D1					■	
Construction of subway entrance D2					■	
Construction of subway entrance D3 inside Liberte			■			
Construction of subway entrance D4 inside The Pacifica			■			

2.2 Construction Activities in the Past Month

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

1800 dia sewer diversion of Lai Chi Kok Sewer under West Kowloon Corridor.

- Continue Construction of new manhole FM-2 for the proposed 1800mm dia sewer diversion.
- Complete 1800 mm dia. diverted sewer pipes laying from new manhole FM-1 via FM-2 to the existing sewer manhole (L-12)
- Continue removal of abandoned section of the existing 1800mm dia sewer for diversion.

Construction of ventilation ducts and shafts

- No significant progress in this reporting month.

Construction of subway .

- Drive sheet piles at Cheung Lai Street in between Cheung Shun Street Cheung and Sha Wan Road.
- Complete substantially the sheetpiling works in between Chung Shun and Cheung Yee and commence temporary road panels construction.
- Continue trial trench excavation and commence sheet piling works at Cheung Lai Street in between Cheung Sha Wan Road and Cheung Shun Street.

2.3 Construction Activities for the Coming Month

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

1800 dia sewer diversion of Lai Chi Kok Sewer under West Kowloon Corridor.

- To complete the proposed sewer diversion works..
- To complete the removal of the existing abandoned pipes for the diversion.

Construction of ventilation ducts and shafts

- To construct the extract smoke ventilation shaft under West Kowloon Corridor.

Construction of subway

- Continue to install temporary road deck panels at Cheung Lai Street in between Cheung Shun Street and Cheung Yee Street.
- Continue to drive the sheetpiles at Cheung Lai Street in between Cheung Shun Street and Cheung Sha Wan Street.
- Commence 400kV power cable relocation works at middle portion of Cheung Lai Street in between Cheung Shun Street and Cheung Yee Street.
- Commence hole drilling for well recharging along Cheung Lai Street.
- To install temporary road deck panels at Lai Chi Kok Road Westbound.

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 reference are presented in Appendix 2 and 3. The results, ranged between 65.2dB(A) and 74.4dB(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	11:30	21-July-08	75.4 dB(A)	74 dB(A)	69.8 dB(A)	75 dB(A)	N
R1	Leq30min	10:37	28-July-08	74.7 dB(A)	74 dB(A)	66.4 dB(A)	75 dB(A)	N
R1	Leq30min	11:05	7-August-08	77.1 dB(A)	74 dB(A)	74.2 dB(A)	75 dB(A)	N
R1	Leq30min	9:53	15-August-08	77.2 dB(A)	74 dB(A)	74.4 dB(A)	75 dB(A)	N
R2	Leq30min	8:55	21-July-08	74.8 dB(A)	74.3 dB(A)	65.2 dB(A)	75 dB(A)	N
R2	Leq30min	9:54	28-July-08	76.1 dB(A)	74.3 dB(A)	71.4 dB(A)	75 dB(A)	N
R2	Leq30min	10:17	7-August-08	75.6 dB(A)	74.3 dB(A)	69.7 dB(A)	75 dB(A)	N
R2	Leq30min	9:05	15-August-08	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 exceedance 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	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to RE / ET. 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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 18th and 25th, August 2008, as well as 1st, 8th and 15th September 2008.

Site inspection schedule for the next reporting period is designated on 25th August 2008 and 8th September 2008.

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)
16 August 07 to 15 September 07	963.75	34.8	--
16 September 07 to 15 October 07	1220.02	0	--
16 October 07 to 15 November 07	186.89	0	--
16 November 07 to 15 December 07	136.7	0	13
16 December 07 to 15 January 08	698.2	102.3	0
16 January 08 to 15 February 08	586.1	0	0
16 February 08 to 15 March 08	322.9	0	0
16 March 08 to 15 April 08	136.71	0	0
16 April 08 to 15 May 08	239.28	0	0
16 May 08 to 15 June 08	0	0	0
16 June 08 to 15 July 08	39.4	0	0
16 July 08 to 15 August 08	54.6	0	0
<i>Total</i>	<i>4529.95</i>	<i>137.1</i>	<i>13</i>

6 COMPLAINT LOG

Table 6.1 Summary of Formal Complaints received

	Air	Noise	Water	Others
16 August 07 to 15 September 07	0	0	0	0
16 September 07 to 15 October 07	0	0	0	0
16 October 07 to 15 November 07	0	0	0	0
16 November 07 to 15 December 07	0	0	0	0
16 December 07 to 15 January 08	0	0	0	0
16 January 07 to 15 February 08	0	0	0	0
16 February 07 to 15 March 08	0	0	0	0
16 March 07 to 15 April 08	0	1	0	0
16 April 07 to 15 May 08	1	0	0	0
16 May 07 to 15 June 08	1	0	0	0
16 June 07 to 15 July 08	1	0	0	0
16 July 07 to 15 August 08	0	0	0	0
<i>Total</i>	<i>3</i>	<i>1</i>	<i>0</i>	<i>0</i>

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	PP-RW0002-08	6 Feb 2008	14 Aug 2008	
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.	Ongoing
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 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 was reminder to strictly follow up the required noise mitigation measures at the work sites for Entrance D3 and D4.to be handed over from the property developer.	Reminder to Contractor
9	The Contractor was reminded to reinstate the drip pan installation at the work site under West Kowloon Corridor.	Awaited

A joint site inspection by the representatives from EPD, MTR, RE, Contractor and Environmental Team was held on July 16th 2008 with no adverse comment made. However, EPD have advised some recommendations to further improve on the contractor's current site environmental management performance as follows:-

- a) If any existing drainage sludge materials with bad smell were needed to be cleaned up in the future drainage diversion works, they shall be well placed and covered inside a proper container for disposal off site. No overnight stockpiling is allowed.
- b) As the coming construction works for sites of Entrance D and E are quite close to the two noise sensitive receivers at the residential buildings Liberte and the Pacifica, proper noise mitigation measures required in the EP should be strictly followed. As agreed by the contractor, no noisy construction activities will be carried out earlier than 9:00 am in morning.
- c) The existing hoarding condition at the Cheung Lai Street site should always be reviewed to prevent any necessary air pollution compliant from the public and nearby shops owners.

The Contractor had agreed to follow the recommendations that were made by EPD

9 CONCLUSION

In this reporting month, construction activities for this project “MTRC Lai Chi Kok Station Pedestrian Subway and Entrance Works” included 1800mm dia sewer diversion works, sheetpiling and temporary support for subway construction, temporary road panels installation, utility diversion works and temporary road diversion. 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

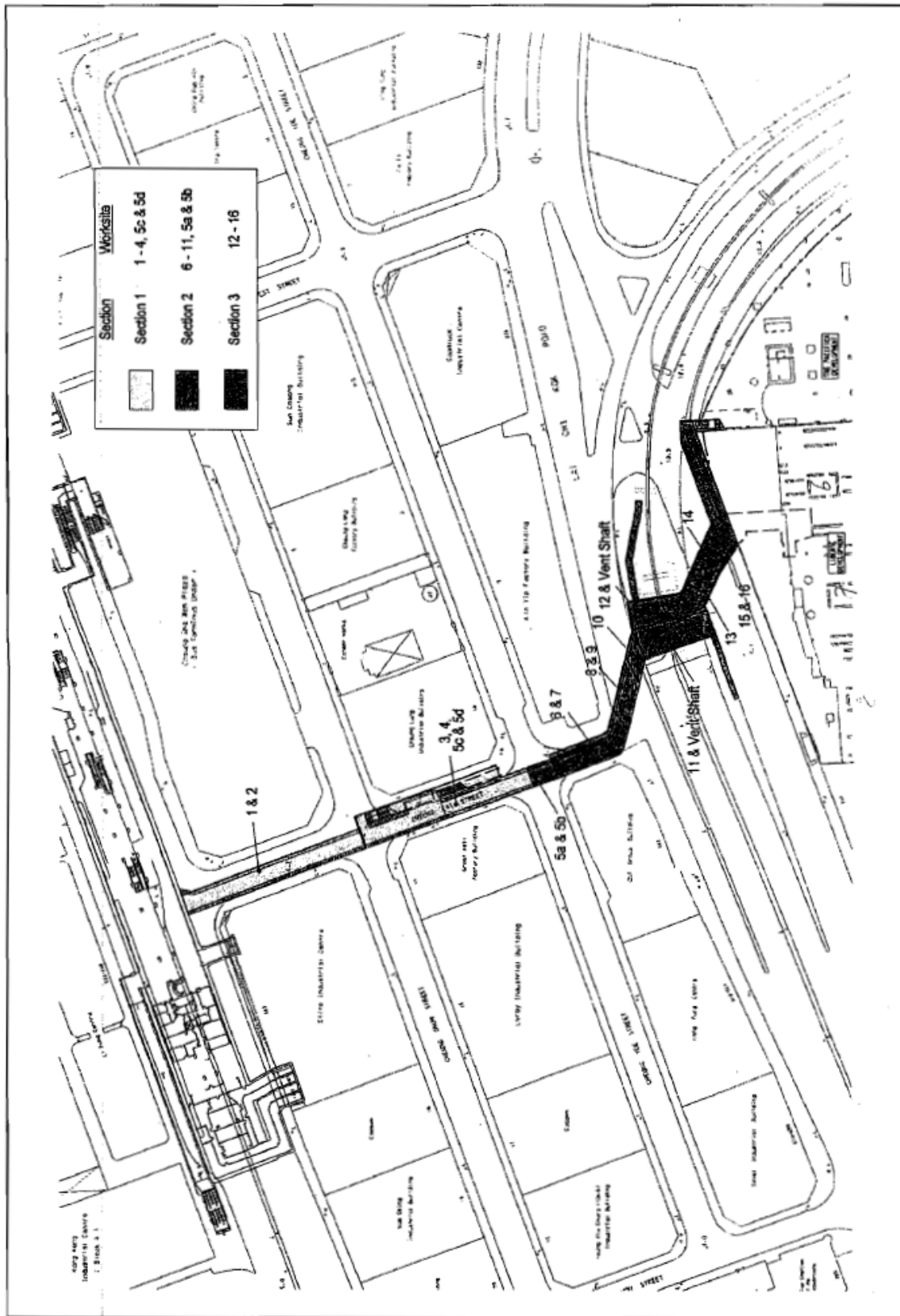


Figure 2 Noise Monitoring Stations R1 and R2

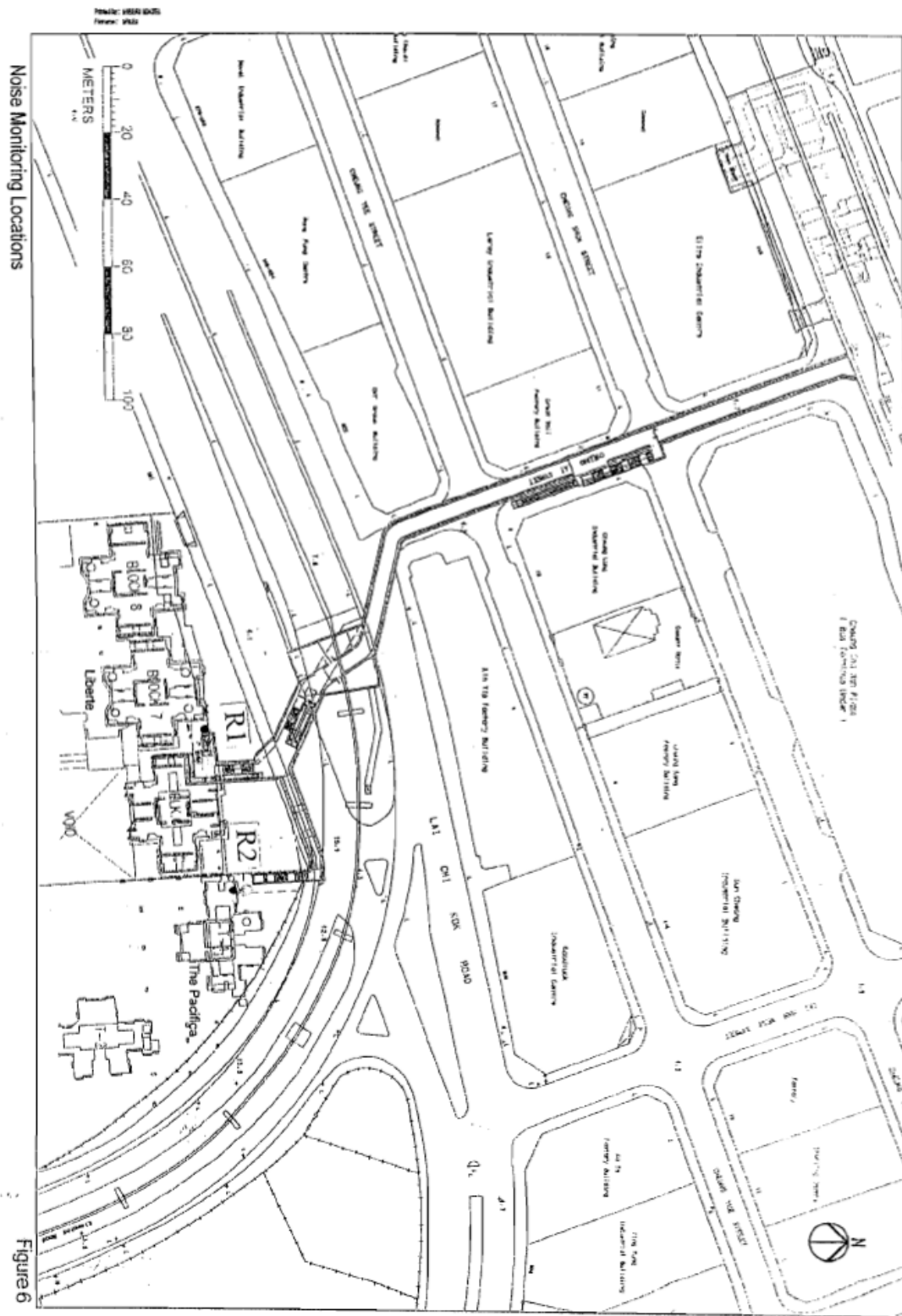
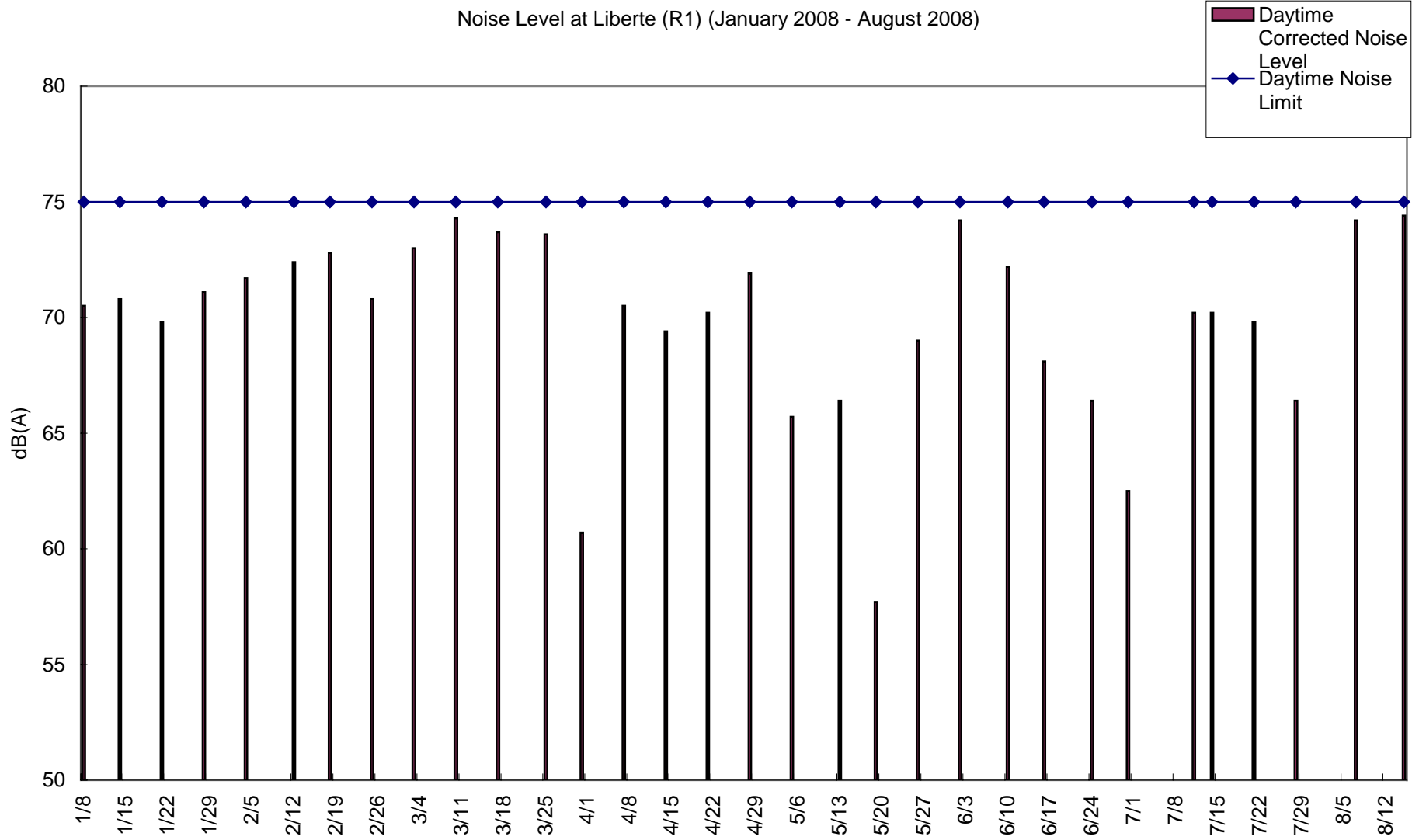
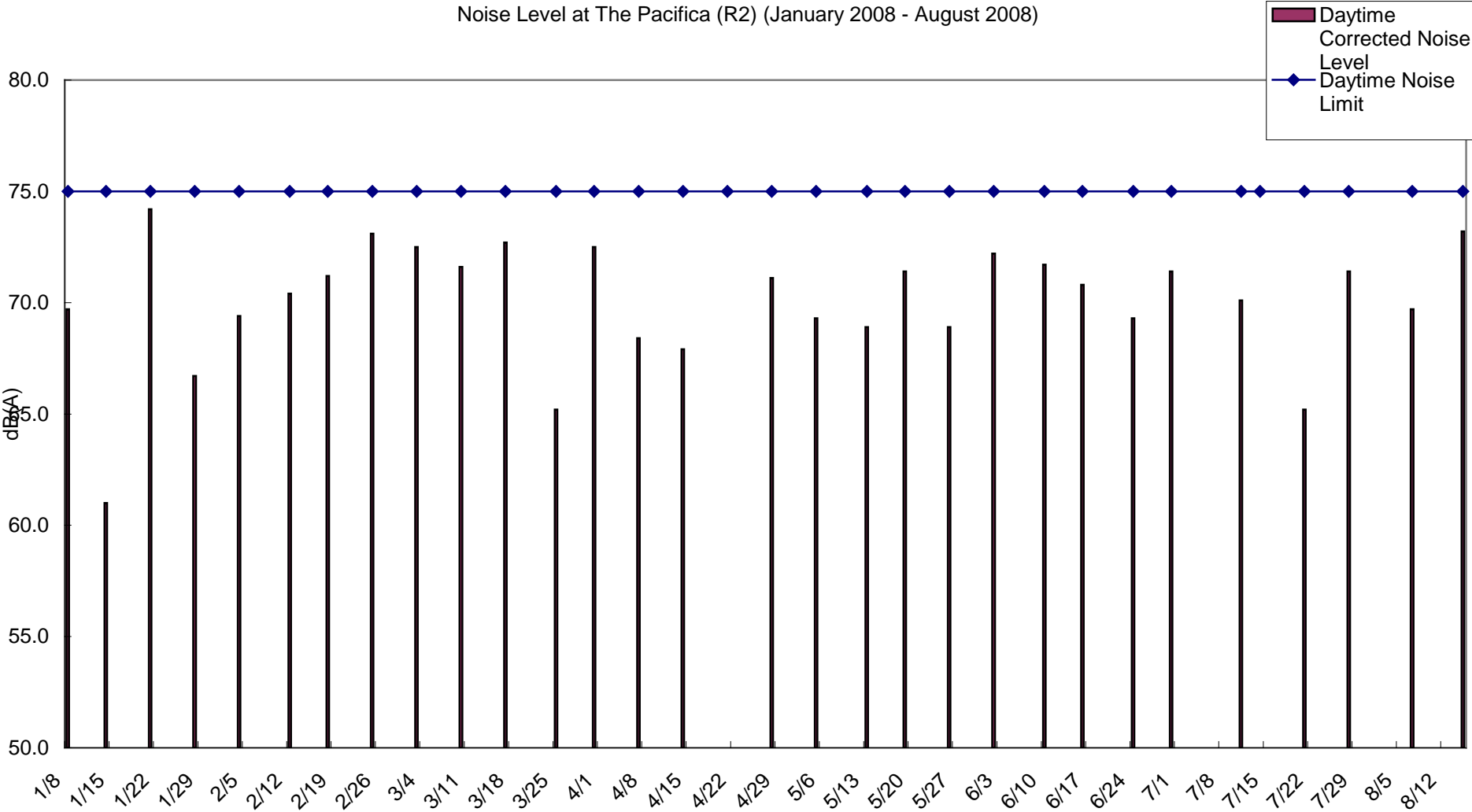


Figure 6

APPENDIX 2 – Environmental Monitoring Data / Charts



Noise Level at The Pacifica (R2) (January 2008 - August 2008)



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:

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

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

And the equation of the Baseline correction:

$$10\log (10^{L_{aeq}/10} - 10^{L_b/10})$$

Where:

L_{aeq} is the $L_{Aeq, 30min}$ from the geometric mean of 6 consecutive L_{eq5min} results

L_b 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		21 July 2008
Sampling Time		11:30-12:00
Weather Condition		Sunny
Baseline Noise Level	dB(A)	74.0
Monitoring Results	L_{eq}, dB(A)	75.4
	L₁₀, dB(A)	76.7
	L₉₀, dB(A)	71.9
Calibration before Measurement	dB(A)	94.0
Calibration after Measurement	dB(A)	94.0
Observation(s)		
Shoveling noise by (Shovel x 3) Crane lifting noise by (Crane Lifter x 1) Transportation noise by public transportation		
Remarks		
N/A		

With Baseline Correction : 69.8 dB(A)

Recorded by : Stephen Tsang

Date : 21 July 2008

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: Sunny Recorded by: _____

Date	Location	Time/H Duration Min.	Comment/Source	L _{max}	L _{min}	L ₁₀	L ₅₀	L _{Aeq}
21-7-2018	St. Liberte	11:30-11:35		79.7	69.6	75.3	72.0	73.8
		11:35-11:40		81.3	70.1	76.9	73.3	75.4
		11:40-11:45		82.0	71.8	77.0	73.7	75.6
		11:45-11:50		90.4	68.2	79.5	71.3	77.1
		11:50-11:55		82.3	68.1	75.8	70.3	76.8
		11:55-12:00		80.5	69.0	75.7	70.8	74.7

L_{Aeq} 30min = 75.4
 L₁₀ 30min = 76.7
 L₉₀ 30min = 71.9

**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 July 2008
Sampling Time		8:55-9:25
Weather Condition		Sunny
Baseline Noise Level	dB(A)	74.3
Monitoring Results	L_{eq}, dB(A)	74.8
	L₁₀, dB(A)	76.4
	L₉₀, dB(A)	71.9
Calibration before Measurement	dB(A)	94.0
Calibration after Measurement	dB(A)	94.0
Observation(s)		
Excavator noise by (Excavator x 1) Crane lifting noise by (Crane Lifter x 1) Shoveling noise by (Shovel x 1) Transportation noise by public transportation		
Remarks		
N/A		

With Baseline Correction : 65.2 dB(A)

Recorded by : Stephen Tsang

Date : 21 July 2008

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: Sunny Recorded by: _____

Date	Location	Time/H Duration Min.	Comment/Source	L _{max}	L _{min}	L ₁₀	L ₉₀	L _{Aeq}
21-7-2008	R2 Pacifica	8:55-9:00		79.2	72.0	76.9	74.0	75.6
		9:00-9:05		79.5	69.9	75.2	71.7	74.3
		9:05-9:10		81.6	69.7	77.5	72.3	75.1
		9:10-9:15		77.1	69.3	75.9	71.5	74.3
		9:15-9:20		76.8	70.7	75.2	71.2	73.8
		9:20-9:25		81.2	69.4	78.0	70.5	75.5

L_{Aeq} 30min = 74.8

L₁₀ 30min = 76.4

L₉₀ 30min = 71.9

**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 July 2008
Sampling Time		10:37-11:07
Weather Condition		Sunny
Baseline Noise Level	dB(A)	74.0
Monitoring Results	L_{eq}, dB(A)	74.7
	L₁₀, dB(A)	76.2
	L₉₀, dB(A)	72.9
Calibration before Measurement	dB(A)	94.0
Calibration after Measurement	dB(A)	94.0
Observation(s)		
Excavation noise by (Excavator x 1) Crane lifting noise by (Crane Lifter x 1) Hand breaking noise by (Pneumatic hand held breaker x 1) Transportation noise by public transportation		
Remarks		
N/A		

With Baseline Correction : 66.4 dB(A)

Recorded by : Stephen Tsang

Date : 28 July 2008

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: Sunny Recorded by: Stephen Tsang

Date	Location	Time/H Duration Min.	Comment/Source	L _{max}	L _{min}	L ₁₀	L ₉₀	L _{Aeq}
28-7-2008	R1 Liberty	10:37-10:42		83.8	71.9	76.3	73.1	74.9
		10:42-10:47		80.0	71.0	76.4	72.7	74.7
		10:47-10:52		82.2	71.4	76.1	72.8	74.7
		10:52-10:57		80.1	70.6	76.4	73.1	74.8
		10:57-11:02		85.7	71.6	75.9	73.1	74.7
		11:02-11:07		80.4	71.1	76.4	72.5	74.7

L_{Aeq} 30 min = 74.7

L₁₀ 30 min = 76.2

L₉₀ 30 min = 72.9

**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 July 2008
Sampling Time		9:54-10:24
Weather Condition		Sunny
Baseline Noise Level	dB(A)	74.3
Monitoring Results	L_{eq}, dB(A)	76.1
	L₁₀, dB(A)	77.7
	L₉₀, dB(A)	74.0
Calibration before Measurement	dB(A)	94.0
Calibration after Measurement	dB(A)	94.0
Observation(s)		
Excavation noise by (Excavator x 1) Crane lifting noise by (Crane Lifter x 1) Hand breaking noise by (Pneumatic hand held breaker x 1) Transportation noise by public transportation		
Remarks		
N/A		

With Baseline Correction : 71.4 dB(A)

Recorded by : Stephen Tsang

Date : 28 July 2008

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: Sunny Recorded by: Stephen Tsang

Date	Location	Time/H Duration Min.	Comment/Source	L _{max}	L _{min}	L ₁₀	L ₅₀	L _{Aeq}
28-7-2008	R2 Pacifica	9:54 - 9:59		84.3	71.9	77.5	73.8	75.9
		9:59 - 10:04		86.8	72.7	78.0	74.2	76.6
		10:04 - 10:09		87.2	72.7	77.8	74.4	76.4
		10:09 - 10:14		81.0	72.0	76.6	73.4	75.2
		10:14 - 10:19		84.3	72.7	78.3	74.2	76.6
		10:19 - 10:24		83.9	72.1	77.8	74.1	76.2

L_{Aeq} 30 min = 76.1

L₁₀ 30 min = 77.7

L₉₀ 30 min = 74.0

**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		7 August 2008
Sampling Time		11:05-11:35
Weather Condition		Cloudy
Baseline Noise Level	dB(A)	74.0
Monitoring Results	L_{eq}, dB(A)	77.1
	L₁₀, dB(A)	81
	L₉₀, dB(A)	71.0
Calibration before Measurement	dB(A)	94.0
Calibration after Measurement	dB(A)	94.0
Observation(s)		
Excavation noise by (Excavator x 1) Crane lifting noise by (Crane Lifter x 1) Hand breaking noise by (Pneumatic hand held breaker x 1) Transportation noise by public transportation Major source: Works by Developer before hand over to Kaden for Subway Construction		
Remarks		
N/A		

With Baseline Correction : 74.2 dB(A)

Recorded by : Stephen Tsang

Date : 7 August 2008

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA

Weather: CLOUDY

Recorded by: Stephen Tsang

Date	Location	Time/H Duration Min.	Comment/Source	L _{max}	L _{min}	L ₁₀	L ₉₀	L _{Aeq}
7-8-2008	R. Liberte	10:17-10:22		86.9	68.4	81.3	72.5	77.5
		10:22-10:27		84.3	68.2	82.7	73.7	78.2
		10:27-10:32		83.5	68.3	80.5	70.5	78.7
		10:32-10:37		84.7	67.1	81.3	70.3	77.3
		10:37-10:42		81.5	65.2	79.5	68.9	75.4
		10:42-10:47		83.4	66.3	80.6	70.5	75.7

L_{Aeq} 30min = 77.1
 L₁₀ 30min = 81.0
 L₉₀ 30min = 71.0

**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		7 August 2008
Sampling Time		10:17-10:47
Weather Condition		Cloudy
Baseline Noise Level	dB(A)	74.3
Monitoring Results	L_{eq}, dB(A)	75.6
	L₁₀, dB(A)	79.7
	L₉₀, dB(A)	70.9
	Calibration before Measurement	dB(A)
Calibration after Measurement	dB(A)	94.0
Observation(s)		
Excavation noise by (Excavator x 1) Crane lifting noise by (Crane Lifter x 1) Hand breaking noise by (Pneumatic hand held breaker x 1) Transportation noise by public transportation Major source: Works by Developer before hand over to Kaden for Subway Construction		
Remarks		
N/A		

With Baseline Correction : 69.7 dB(A)

Recorded by : Stephen Tsang

Date : 7 August 2008

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: CLOUDY Recorded by: Stephen Tsang

Date	Location	Time/H Duration Min.	Comment/Source	L _{max}	L _{min}	L ₁₀	L ₉₀	L _{Aeq}
7-8-2008	R. Pacifica	11:05-11:10		84.1	67.6	80.5	71.4	76.7
		11:10-11:15		85.2	67.7	81.4	71.0	77.4
		11:15-11:20		83.4	69.5	79.5	70.5	75.3
		11:20-11:25		84.3	68.3	79.8	70.4	75.4
		11:25-11:30		81.3	66.4	77.5	70.7	74.3
		11:30-11:35		79.5	65.4	79.8	71.2	74.7

L_{Aeq} 30min = 75.6
 L₁₀ 30min = 79.7
 L₉₀ 30min = 70.9

**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		15 August 2008
Sampling Time		9:53 - 10:23
Weather Condition		Sunny
Baseline Noise Level	dB(A)	74.0
Monitoring Results	L_{eq}, dB(A)	77.2
	L₁₀, dB(A)	78.8
	L₉₀, dB(A)	74.5
Calibration before Measurement	dB(A)	94.0
Calibration after Measurement	dB(A)	94.0
Observation(s)		
Excavation noise by (Excavator x 1) Crane lifting noise by (Crane Lifter x 1) Vibratory hammering noise by (Vibratory hammer x 1) Transportation noise by public transportation		
Remarks		
N/A		

With Baseline Correction : 74.4 dB(A)

Recorded by : Stephen Tsang

Date : 15 August 2008

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: Sunny Recorded by: Stephen Tsang

Date	Location	Time/H Duration Min.	Comment/Source	L _{max}	L _{min}	L ₁₀	L ₉₀	L _{Aeq}
15-8-2018	R. Liberte	9:53-9:58		78.0	63.2	79.9	73.3	78.5
		9:58-10:03		81.0	72.0	78.2	75.2	76.9
		10:03-10:08		83.0	72.5	78.1	75.1	76.8
		10:08-10:13		83.3	72.7	78.7	74.3	76.8
		10:13-10:18		82.8	73.5	79.3	75.3	77.7
		10:18-10:23		83.9	71.9	78.9	74.0	76.8

L_{Aeq} 30min = 77.2

L₁₀ 30min = 78.8

L₉₀ 30min = 74.5

**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		15th August 2008
Sampling Time		9:05 - 9:35
Weather Condition		Sunny
Baseline Noise Level	dB(A)	74.3
Monitoring Results	L_{eq}, dB(A)	76.8
	L₁₀, dB(A)	78.7
	L₉₀, dB(A)	73.4
Calibration before Measurement	dB(A)	94.0
Calibration after Measurement	dB(A)	94.0
Observation(s)		
Excavation noise by (Excavator x 1) Crane lifting noise by (Crane Lifter x 1) Vibratory hammering noise by (Vibratory hammer x 1) Transportation noise by public transportation		
Remarks		
N/A		

With Baseline Correction : 73.2 dB(A)

Recorded by : Stephen Tsang

Date : 15 August 2008

NOISE MEASUREMENT RECORD

SUMMARY

Frequency weightings: _____ dBA Weather: Sunny Recorded by: Stephen Tsang

Date	Location	Time/H Duration Min.	Comment/Source	L _{max}	L _{min}	L ₁₀	L ₅₀	L _{Aeq}
15-8-2008	R2 Pacifica	9:05-9:10		92.3	69.0	79.3	73.2	77.5
		9:10-9:15		86.8	72.7	79.7	75.0	77.7
		9:15-9:20		86.7	72.5	78.7	74.5	77.4
		9:20-9:25		90.7	69.3	77.1	71.9	75.3
		9:25-9:30		85.3	70.2	77.9	72.1	75.3
		9:30-9:35		90.6	70.8	79.4	73.7	77.5

L_{Aeq} 30 min = 76.8
 L₁₀ 30 min = 78.7
 L₉₀ 30 min = 73.4