

Mass Transit Railway Corporation  
Limited

Contract 5032 Mong Kok Station  
New Integrated Entrance C3

Baseline Monitoring  
Report


**April 2003**

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## ***EXECUTIVE SUMMARY***

### *Background*

The initial proposal for Modifications to MTRC Mong Kok Station resulted from discussion between the MTR Corporation Limited (MTRC) and the Urban Renewal Authority (URA), who are building an extensive development, namely the K2 Development at the west of the Mong Kok Station. The proposed modifications to MTRC Mong Kok Station is regarded as a “material change” to an exempted project under Section 9(2)(g) of the EIA Ordinance (EIAO) and anticipated that there would not be any adverse environmental impacts associated with the operation phases of this project.

### *Impact Assessment and Baseline Monitoring*

With the recommendation given by the Project Profile December 2002 prepared by Maunsell Environmental Management Consultant Ltd, baseline monitoring has been conducted for noise at the proposed representative monitoring locations, by which the performance of the construction contractor may be measured in meeting required environmental protection standards. The two noise baseline monitoring were conducted at roof of the resident buildings, located at 35-37A and 43-49A Argyle Street, Mong Kok, during the period from 19 February to 13 March 2003.

### *Results and Conclusions*

The noise baseline monitoring had been carried out in accordance to the recommendations contained in the Technical Memoranda associated with EIAO, Noise Control Ordinance, where applicable. Results and conclusions of the report were presented in the subsequent sections of the Baseline Monitoring Report, which will be distributed to Environmental Protection Department of HKSAR, the Contractor and the design and construction teams of MTRC.

## **1 INTRODUCTION**

### **1.1 BACKGROUND**

- 1.1.1 The initial proposal for Mong Kok Station modification works resulted from the agreement between MTRC and URA, who are building an extensive development project, namely the K2 Development, to the west of the Mong Kok Station. To cater for the increase in entrance demand generated by the URA new development, modification of the station is required. The major modification works involve the demolition of the existing entrance C3 and the establishment of a new entrance at the URA K2 development site underneath Portland Street and Argyle Street.

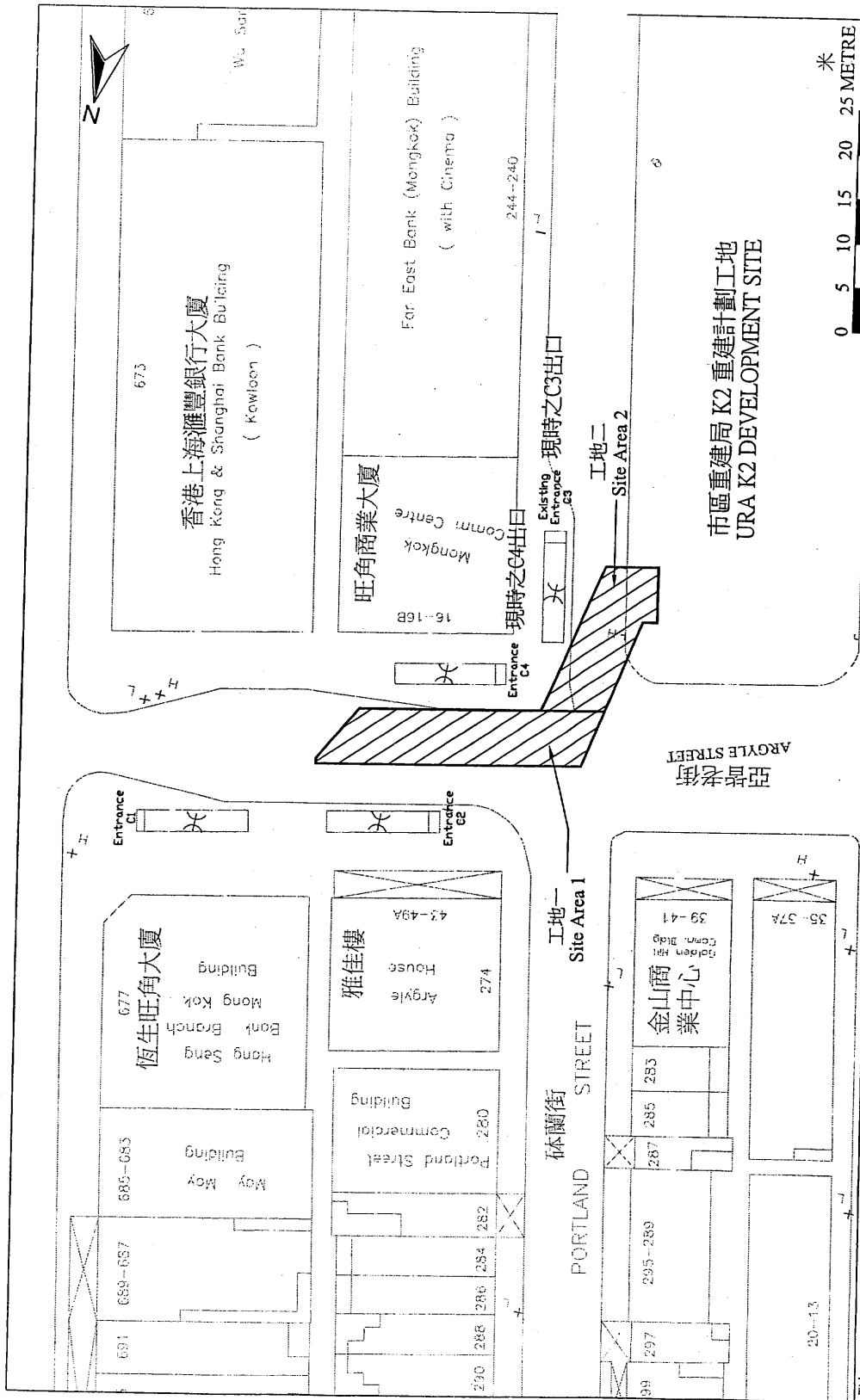
The modification works of the Mong Kok Station is titled as Mong Kok Station New Integrated Entrance C3 (here after called "the Project"). The location of the Project is shown in Figure 1. A new subway of approximately 50m long with a clear width of 6.2m connecting the Mong Kok Station with URA's K2 development will be constructed. The project has been scheduled to start in March 2003 and would take approximately 20 months to complete.

- 1.1.2 An EIA study (the Project Profile December 2002) has been conducted by Maunsell Environmental Management Consultant Ltd for the proposed Mong Kok Station modification works. The study details the Environmental Impact and Assessment of the Project and recommends that adverse construction dust impact from the construction site would not be expected. On the other hand, regular monitoring on the construction noise generated from the work site at various stages of construction activities and relevant noise mitigation measures are recommended.
- 1.1.3 Baseline levels have been established for noise, the performance of the Contractor shall be measured in meeting required environmental protection standards and requirements under the Environmental Permit, during the course of the construction work. The baseline monitoring was carried out at two representative NSRs N1MOKC3 and N2MOKC3 in the vicinity of the work site (refer to Figure 2). These are presented in subsequent sections of this report.

### **1.2 ORGANISATION OF THE REPORT**

Following the introduction, the remainder of this Report is arranged as follows:

- Section 2 describes how the air quality adjacent the works site would be affected during operations of construction activities of the project.
- Section 3 describes the noise quality monitoring methodology and analyses the monitoring results.
- Section 4 Conclusions



Title

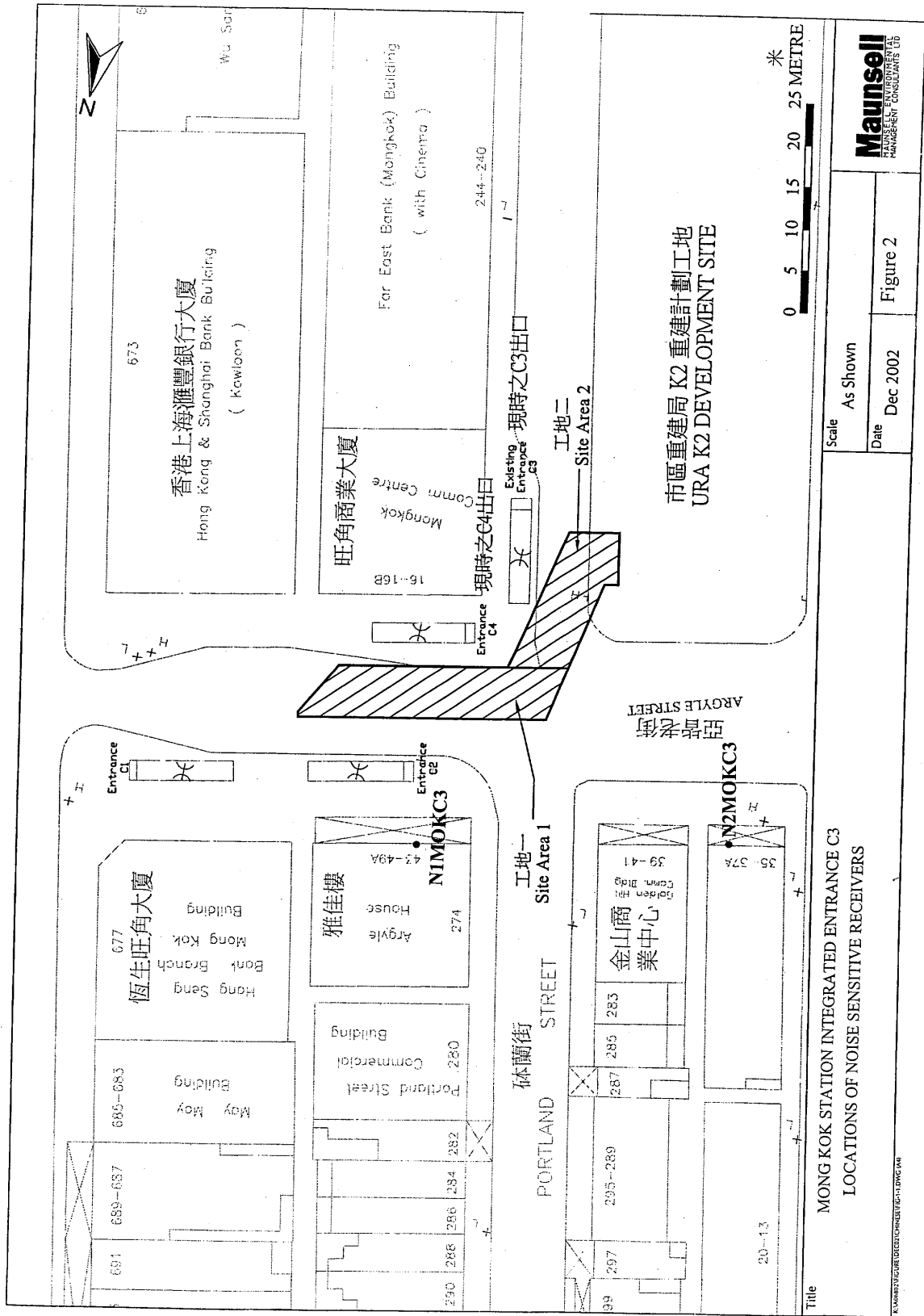
MONG KOK STATION INTEGRATED ENTRANCE C3 SITE LOCATION PLAN

Scale As Shown

Date Dec 2002

Figure 1





## **2     *AIR QUALITY***

### **2.1   *AIR IMPACT ASSESSMENT***

During the construction phase, dust would be generated from the demolition of existing entrance C3, excavation activities and emissions of plant exhaust on the site. However, in light of the limited number of plant required in such small scale of Project together with the adoption of noise enclosures for some powered mechanical equipment (PME), no significant air quality impact is anticipated. Besides, dust arising from various construction activities would be controlled by implementing dust suppression measures as stipulated in the Air Pollution Control (Construction Dust) Regulation, adverse construction dust impact would therefore not be expected.



### **3 NOISE**

#### **3.1 MONITORING METHODOLOGY**

Monitoring was undertaken to establish noise baseline levels in the vicinity of the works areas at Mong Kok MTR Station, to provide data against which any environmental impacts due to construction activities can be assessed and compared.

The baseline monitoring stations were established at the following locations: -

- N1MOKC3 Residential Building at 43-49A Argyle Street with 15 stories.
- N2MOKC3 Residential Building at 35-37A Argyle Street with 8 stories.

Consecutive noise measurements were undertaken over a period of at least 14 days to establish the ambient noise levels at representative nearest sensitive receivers. Continuous 5 minute A-weighted noise levels were recorded throughout the daytime, evening and night-time on weekdays (Monday to Saturday) and also on Sundays. The noise levels were then averaged (weekdays and Sundays separately) over each 30 minute period to produce the baseline conditions.

Monitoring was conducted using B&K sound analysis equipment – B&K SLM 2236. Free-field and weatherproof microphone was extended 1.2 metres from roof of the two residential building with an unobstructed field of view to works area of the Project.

#### **3.2 CALIBRATION REQUIREMENTS**

A B&K 2236 sound level meter and B&K 4231 calibrator which complied with the International Electrotechnical Commission Publication 651:1979 (Type 1) and 804:1985 (Type 1), specification as referred to in the Technical Memoranda to the NCO were used for the baseline monitoring. The sound level meter and calibrator are verified by the certified laboratory or manufacturer once every two years to ensure they perform to the same level of accuracy as stated in the manufacturer's specifications.

Immediately prior to and following each set of measurements at any NSR, the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. If the calibration levels before and after the measurement differs by more than 1.0dB the measurement shall be repeated to obtain a reliable result (note: maximum deviation during this initial baseline monitoring period was 0.2dB). Periods of prolonged or repeated overloading of the sound level meter detector were avoided by setting the meter with adequate headroom prior to commencing measurements. Measurements were recorded to the nearest 0.1 dB, with values of 0.05 being rounded up.

All Noise Sensitive Receivers at the above locations are currently classified as ASR”C”. Limit levels for these locations are shown in *Table 3.2 a*.

***Table 3.2a Limit Levels for Construction Noise***

<b>Time Period</b>	<b>Noise Level (dB) for NSRs N1MOKC3 and N2MOKC3</b>
Daytime (0700-1900), Monday through Saturday excluding Public Holidays	$L_{Aeq\ 30mins}75^{(1)}$
All evenings (1900-2300)	Subject to control under the Noise Control Ordinance
General Holidays (including all Sundays) during the daytime and evening (0700-2300)	Subject to control under the Noise Control Ordinance
All night time periods (2300-0700)	Subject to control under the Noise Control Ordinance

<sup>(1)</sup>Limit level guideline, for educational establishments the limit level shall be 70, reduced to 65 during examination periods.

### 3.3 MONITORING RESULTS

30 minute, "fast" detector response, levels were recorded in the following indices,  $L_{Aeq}$ ,  $L_{A10}$ ,  $L_{A90}$ . The baseline data was initially downloaded into a spreadsheet, directly from the noise loggers in ASCII format for checking, and then imported into the database. The  $L_{Aeq}$  results for each 30 minute period were averaged and then plotted to obtain a single "smoothed" weekday time history graph. An average of two 24 hour Sunday periods was covered at each monitoring station. The resultant 24 hour time history graphs display the "smoothed"  $L_{Aeq, 30 \text{ min}}$  levels as a curved line together with the appropriate limit levels. 'Time Slot Averaged', 'Noise Control Period Averaged' and 'Whole Day Averaged' baseline levels are presented for each monitoring location in *Annex A*.

Weather conditions throughout the monitoring period were mild and sometimes with light wind. The dominant noise sources recorded at the two NSRs during the monitoring period are noise from pedestrians and running vehicular traffic with a considerable portion of buses and light trucks and construction noise from the adjacent URA K2 development site and road maintenance works on Argyle Street. For a busy business district like Mong Kok, especially around the vicinity of the Mong Kok Station entrance C3 & C4, it was noted that the averaged noise levels recorded the two NSR's can be summarized as :-

Noise control period averaged baselines (LEQ) :-

<u>NSR</u>	<u>Noise control period</u>	<u>Weekdays</u>	<u>Saturdays</u>	<u>Sundays</u>
N1MOKC3 (Roof of residential building at 43-49A Argyle Street)	0700-1900	71.1	71.2	67.5
	1900-2300	67.8	68.0	67.0
	2300-0700	64.8	65.0	64.9
Note: - Readings obtained on 10/3/2003 are excluded from the calculation of averaged baselines (LEQ) due to rather higher noise levels recorded during period of the daytime. Such high noise levels may be caused by breaking hard material activity of the road maintenance works on Argyle Street.				
N2MOKC3 (Roof of residential building at 35-37A Argyle Street)	0700-1900	75.0	74.9	71.3
	1900-2300	71.4	71.7	70.9
	2300-0700	68.7	69.1	69.1

## **4 CONCLUSION**

### **4.1 BASELINE LEVELS**

#### **4.1.1 Air**

As recommended in the Project Profile prepared by Maunsell Environmental Management Consultant Ltd, no adverse construction dust impact generated from the site would be expected. However dust arising from various construction activities would be controlled by implementing dust control measures stated in Item 5.1.1 of the Project Profile.

#### **4.1.2 Noise**

Baseline monitoring was conducted at the two representative NSRs, namely the residential buildings at 43-49A and 35-37A Argyle Street respectively (N1MOKC3 and N2MOKC3) from 19 February to 13 March 2003. Baseline levels have been established for both weekday and Sunday periods.

For NSR, N1MOKC3, the averaged baseline levels for weekdays and Saturdays, recorded in the noise control period 0700 to 1900 and the noise restricted hours 1900 to 0700, are 71.2dBA and 66.4dBA respectively. Similar to NSR, N2MOKC3, the averaged levels are 75.0dBA and 70.2dBA respectively. It was noted that restricted hour limit levels of the two NSRs are exceeded by the ambient noise ranging from 12dBA to 29.1dBA.

The major noise sources are noticed from the vehicular traffic, especially that along Nathan Road and Argyle Street, with contribution from the congested pedestrian at such a busy business and the adjacent construction site for the URA K2 development.

### **4.2 ACTION AND TARGET LEVELS**

#### **4.2.1 Noise**

Action level exceedance occurs when one or more documented complaints are received.

Limit level is set at  $L_{Aeq\ 30mins}75^{(1)}$  for normal working hours (i.e. 0700 – 1900 hours on any day not being a Sunday or general holiday), as suggested in EIAO-TM and the Practice Note for Professional Persons ProPECC PN2/93. For restricted hours (i.e. 1900 – 0700 hours for weekdays and all day on Sundays and general holidays), limit level shall be subjected to control under the Noise Control Ordinance (NCO).

## ANNEX A

### **Noise Baseline Measurements**

**Noise Baseline Measurements**

**Project: MTRC Contract No.5032 Mong Kok Station Integrated Entrance C3**  
**Monitoring Location: Roof, Argyle House, 43-49A Argyle Street (N1MOKC3)**  
**Monitoring Period: 25 Feb 03 to 13 Mar 03**

**Time Slot Averaged Baselines:**

Time Slot	Weekdays			Saturdays			Sundays		
	LEQ	L10	L90	LEQ	L10	L90	LEQ	L10	L90
0000-0030	66.7	68.7	63.4	67.7	69.8	64.5	66.2	68.3	63.0
0030-0100	66.6	68.3	63.0	65.7	67.5	62.8	66.4	68.5	63.3
0100-0130	65.0	66.8	61.7	64.9	66.8	62.0	65.4	67.3	62.3
0130-0200	64.1	65.9	61.0	64.3	66.0	61.3	65.3	67.0	62.0
0200-0230	64.0	65.7	60.7	65.2	66.5	61.0	64.4	66.3	61.5
0230-0300	63.6	65.2	60.4	63.5	65.0	60.5	64.2	66.0	61.0
0300-0330	63.3	65.0	60.0	63.6	65.5	60.0	63.8	65.3	60.8
0330-0400	62.9	64.7	59.8	63.5	64.8	60.3	64.0	65.3	60.5
0400-0430	63.2	64.7	59.8	63.1	64.5	59.8	63.4	65.0	60.3
0430-0500	62.8	64.7	59.3	63.2	64.5	59.5	63.4	65.3	60.3
0500-0530	63.0	64.8	59.3	63.4	65.5	59.5	63.3	65.3	60.0
0530-0600	62.9	64.9	59.3	62.8	64.8	59.5	63.8	65.5	59.5
0600-0630	63.6	65.9	59.7	63.4	65.5	59.3	63.7	66.0	59.8
0630-0700	65.5	68.0	60.8	65.0	67.5	60.5	64.9	67.3	60.5
0700-0730	66.7	69.0	62.8	66.5	69.0	62.3	66.1	68.3	61.5
0730-0800	68.1	70.0	64.7	68.4	70.3	65.1	66.0	68.3	61.8
0800-0830	69.3	70.9	66.5	69.9	71.3	66.8	66.3	68.8	62.0
0830-0900	70.7	72.1	68.2	70.7	72.3	68.3	66.9	69.0	63.0
0900-0930	71.6	73.0	69.3	71.5	72.8	69.8	67.1	69.0	63.3
0930-1000	72.0	73.2	69.9	71.5	72.8	69.5	67.5	69.5	64.3
1000-1030	72.4	73.7	70.2	71.8	72.8	69.8	67.3	69.0	64.3
1030-1100	72.1	73.5	69.9	72.1	73.3	70.0	67.6	69.3	64.5
1100-1130	71.9	73.2	69.8	72.7	74.6	70.0	67.7	69.5	64.8
1130-1200	71.8	73.2	69.7	73.1	75.6	69.8	67.6	69.3	64.5
1200-1230	70.6	72.0	68.4	70.5	72.0	68.5	67.6	69.3	64.8
1230-1300	70.1	71.5	67.8	70.7	71.9	68.4	67.3	69.3	64.3
1300-1330	70.3	72.0	68.0	71.0	72.4	68.8	67.8	69.5	64.8
1330-1400	71.6	72.9	69.5	71.0	72.3	69.3	67.8	69.5	65.0
1400-1430	72.0	73.2	70.0	71.9	73.0	69.8	68.1	69.8	65.3
1430-1500	72.0	73.2	70.0	71.9	73.0	70.0	68.0	69.5	65.3
1500-1530	72.1	73.3	70.1	71.8	73.1	69.8	68.0	69.5	65.5
1530-1600	71.5	72.8	69.5	71.2	72.5	69.3	68.0	69.5	65.3
1600-1630	71.5	72.5	69.5	71.6	73.0	69.3	68.1	69.5	65.8
1630-1700	71.8	73.0	69.8	72.3	73.5	70.3	68.2	69.8	65.5
1700-1730	71.4	72.7	69.5	71.9	73.1	69.8	68.1	69.5	65.3
1730-1800	71.0	72.3	68.9	71.4	72.5	69.3	68.2	69.5	65.3
1800-1830	70.2	71.5	68.2	70.1	71.5	68.3	67.6	69.0	65.0
1830-1900	69.5	71.0	67.3	70.0	71.3	68.1	67.5	69.0	64.8
1900-1930	68.9	70.4	66.6	69.6	71.1	66.8	67.3	69.0	64.5
1930-2000	68.2	69.7	65.7	68.7	70.3	66.3	67.3	69.0	64.0
2000-2030	67.9	69.7	65.0	67.9	69.5	65.3	66.8	68.5	64.0
2030-2100	67.6	69.2	64.6	67.6	69.3	64.8	66.9	69.0	63.5
2100-2130	67.3	69.2	64.3	68.2	69.5	64.0	66.9	69.0	63.5
2130-2200	67.4	69.3	64.4	67.0	69.0	64.5	66.9	69.0	63.5
2200-2230	67.3	69.2	64.6	67.5	69.3	64.3	66.9	68.5	63.8
2230-2300	67.3	69.3	64.6	67.4	69.3	64.5	67.1	69.3	64.0
2300-2330	67.8	69.7	64.1	67.4	69.3	64.5	66.9	69.3	63.5
2330-0000	66.8	68.8	63.7	67.6	69.5	64.5	66.5	68.8	63.0

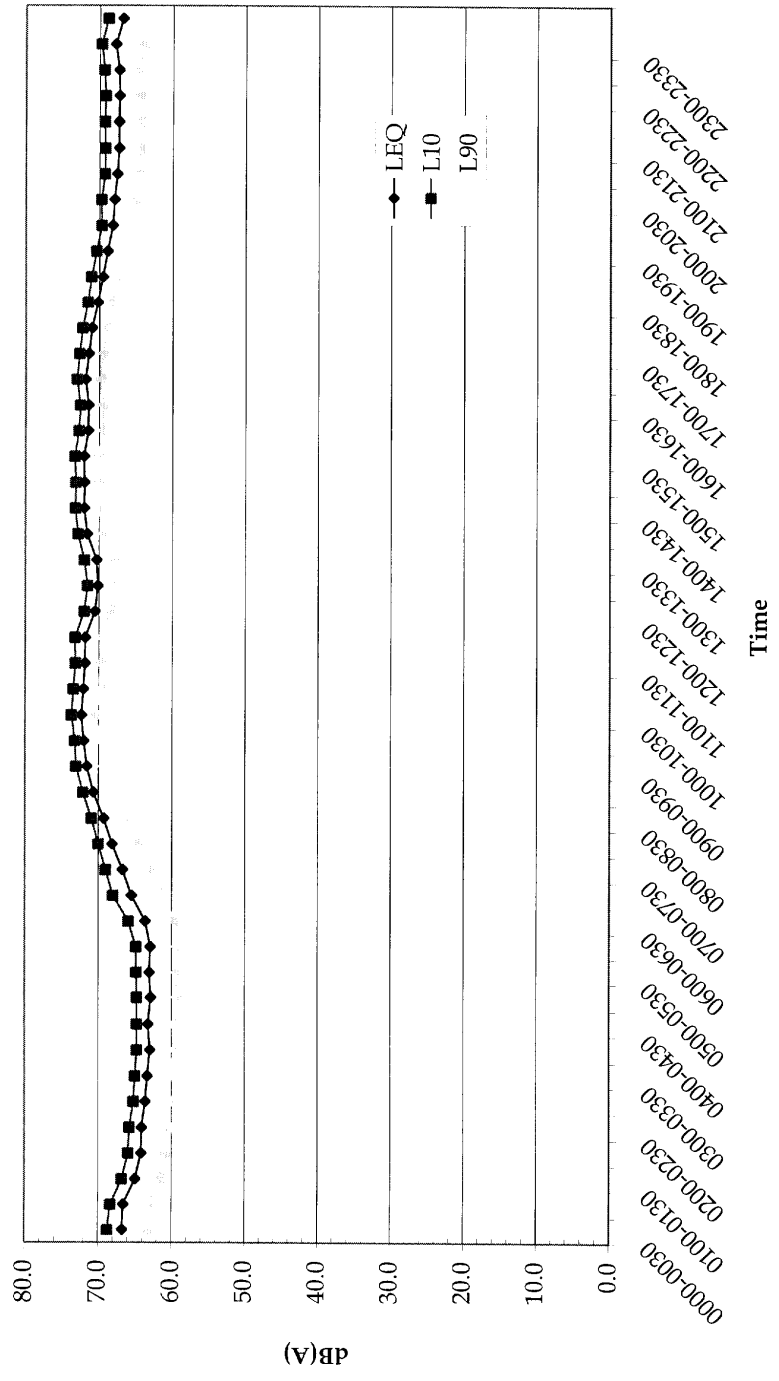
**Noise Control Period Averaged Baselines (LEQ):**

Noise Control Period	Weekdays	Saturdays	Sundays
0700-1900	71.1	71.2	67.5
1900-2300	67.8	68.0	67.0
2300-0700	64.8	65.0	64.9

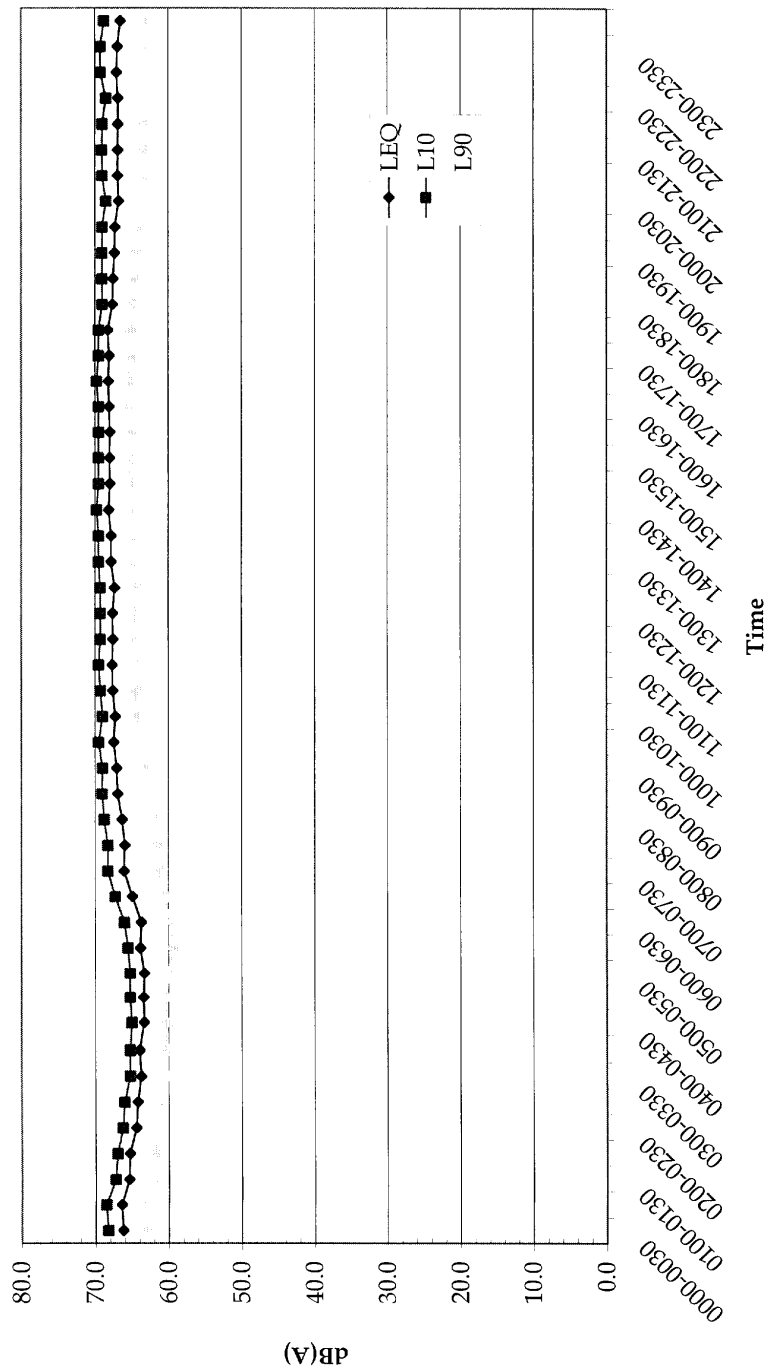
**Whole Day Averaged Baselines:**

Weekday Average LEQ	68.6
Saturday Average LEQ	68.8
Sunday Average LEQ	66.6

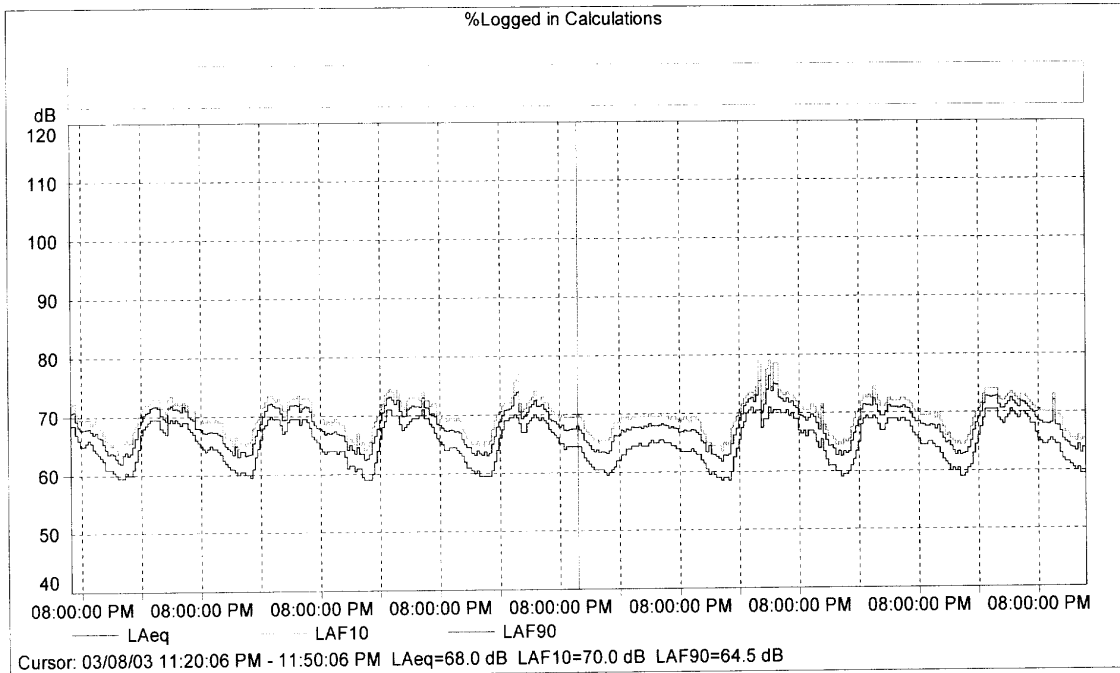
Argyle House (NIMOKC3) Time History Graph - Weekdays

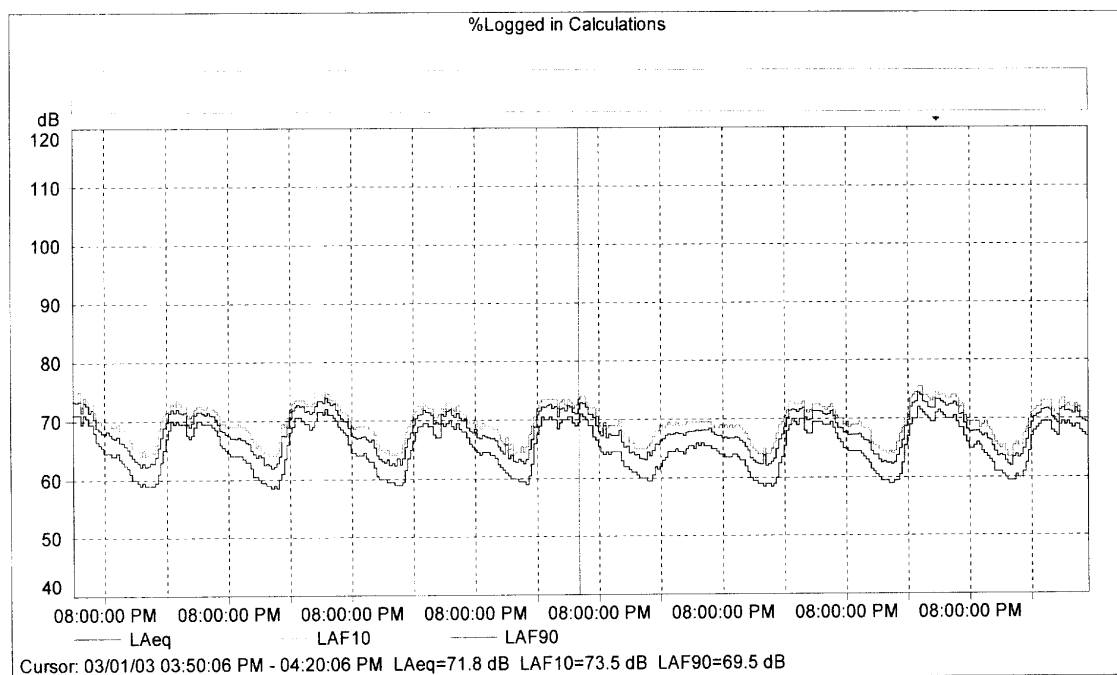


Argyle House (N1MOKC3) Time History Graph - Sundays









**Noise Baseline Measurements**

**Project: MTRC Contract No.5032 Mong Kok Station Integrated Entrance C3**  
**Monitoring Location: Roof, 35-37A Argyle Street (N2MOKC3)**  
**Monitoring Period: 19 Feb 03 to 7 Mar 03**

**Time Slot Averaged Baselines:**

Time Slot	Weekdays			Saturdays			Sundays		
	LEQ	L10	L90	LEQ	L10	L90	LEQ	L10	L90
0000-0030	70.1	72.8	65.1	70.2	73.0	65.0	70.7	73.5	65.8
0030-0100	69.4	72.1	64.5	69.2	71.8	64.8	70.2	72.5	65.0
0100-0130	68.5	71.0	63.9	68.8	71.0	64.3	70.3	72.5	64.5
0130-0200	68.0	70.3	63.4	68.6	71.3	63.8	69.0	71.3	63.8
0200-0230	67.7	69.9	63.5	69.9	70.8	63.5	68.6	71.0	63.8
0230-0300	67.3	69.7	63.1	68.1	70.3	63.0	68.7	70.8	63.3
0300-0330	67.4	69.7	62.9	67.3	69.5	62.5	67.9	70.0	63.0
0330-0400	67.2	69.4	62.7	67.4	69.5	62.3	67.2	69.8	62.5
0400-0430	67.4	69.9	62.4	67.5	70.0	62.3	67.7	70.3	62.5
0430-0500	67.0	69.5	62.1	67.5	70.3	62.3	67.6	70.3	62.5
0500-0530	66.9	69.6	61.7	67.4	70.3	62.5	68.3	70.0	62.5
0530-0600	67.6	70.5	61.7	67.6	70.3	62.0	67.7	70.8	61.8
0600-0630	69.2	72.5	62.7	69.0	72.5	62.8	68.6	71.5	62.5
0630-0700	70.4	73.7	64.3	70.2	73.8	64.3	69.6	73.0	63.0
0700-0730	72.2	75.1	67.2	72.7	75.3	68.0	69.8	73.5	63.0
0730-0800	73.3	75.7	69.1	73.8	76.0	69.8	70.4	73.8	63.5
0800-0830	74.4	76.5	70.7	75.0	76.8	71.8	70.3	73.8	63.5
0830-0900	75.6	77.5	72.6	75.4	77.0	72.8	70.8	73.8	65.6
0900-0930	75.7	77.5	72.8	75.7	77.3	73.0	71.2	74.0	66.3
0930-1000	76.0	77.7	73.1	75.9	77.5	72.8	71.2	73.8	66.3
1000-1030	76.0	77.7	73.1	75.9	77.5	73.3	71.5	74.3	66.3
1030-1100	75.6	77.4	72.7	75.6	77.3	72.8	70.9	73.8	66.5
1100-1130	75.7	77.4	72.7	75.7	77.3	73.0	71.3	74.0	66.3
1130-1200	74.6	76.5	71.3	74.8	76.5	71.8	71.1	74.0	65.8
1200-1230	73.9	76.0	70.7	74.3	76.3	71.3	71.0	73.8	66.0
1230-1300	73.9	75.8	70.6	74.3	76.3	71.3	71.2	74.0	66.3
1300-1330	75.1	77.1	71.8	75.0	76.8	72.5	71.6	74.0	67.0
1330-1400	75.9	77.6	73.0	75.2	76.8	72.8	71.5	74.3	66.8
1400-1430	75.6	77.2	72.8	75.2	77.0	72.8	71.4	74.3	66.8
1430-1500	75.9	77.4	73.1	74.9	76.5	72.5	71.6	74.3	67.0
1500-1530	75.5	77.3	72.5	74.6	76.3	71.8	71.4	74.0	67.3
1530-1600	75.1	76.9	72.0	74.7	76.3	72.3	71.5	74.3	67.0
1600-1630	75.5	77.1	72.7	75.2	76.8	72.5	71.7	74.5	67.5
1630-1700	75.4	77.0	72.3	75.1	76.5	72.5	71.8	74.5	67.3
1700-1730	74.8	76.6	71.8	75.2	76.8	72.5	71.5	74.3	67.0
1730-1800	74.2	76.1	70.9	74.5	76.5	71.3	72.6	74.8	67.3
1800-1830	73.3	75.5	69.6	73.8	75.8	70.8	71.7	74.3	67.0
1830-1900	72.8	75.1	68.6	73.2	75.5	69.5	71.4	74.3	66.5
1900-1930	72.2	74.8	67.9	73.0	75.3	69.0	71.3	74.0	65.8
1930-2000	71.6	74.5	66.6	71.8	74.5	67.1	70.9	73.5	65.5
2000-2030	71.8	74.5	66.1	71.4	74.0	65.8	70.8	74.0	65.3
2030-2100	71.0	73.8	65.7	71.4	73.8	65.5	71.3	74.0	65.8
2100-2130	71.1	74.1	66.2	71.1	74.0	66.0	70.7	74.0	65.5
2130-2200	71.1	74.0	66.3	72.4	74.3	66.5	70.7	73.8	65.8
2200-2230	71.1	74.1	66.2	71.0	74.0	66.0	70.7	73.8	65.5
2230-2300	71.1	74.2	66.0	71.2	74.0	66.3	70.7	74.0	65.3
2300-2330	70.8	74.0	65.6	71.1	74.3	66.3	70.9	74.0	65.0
2330-0000	70.7	73.7	65.5	72.0	74.5	66.3	70.5	73.5	65.0

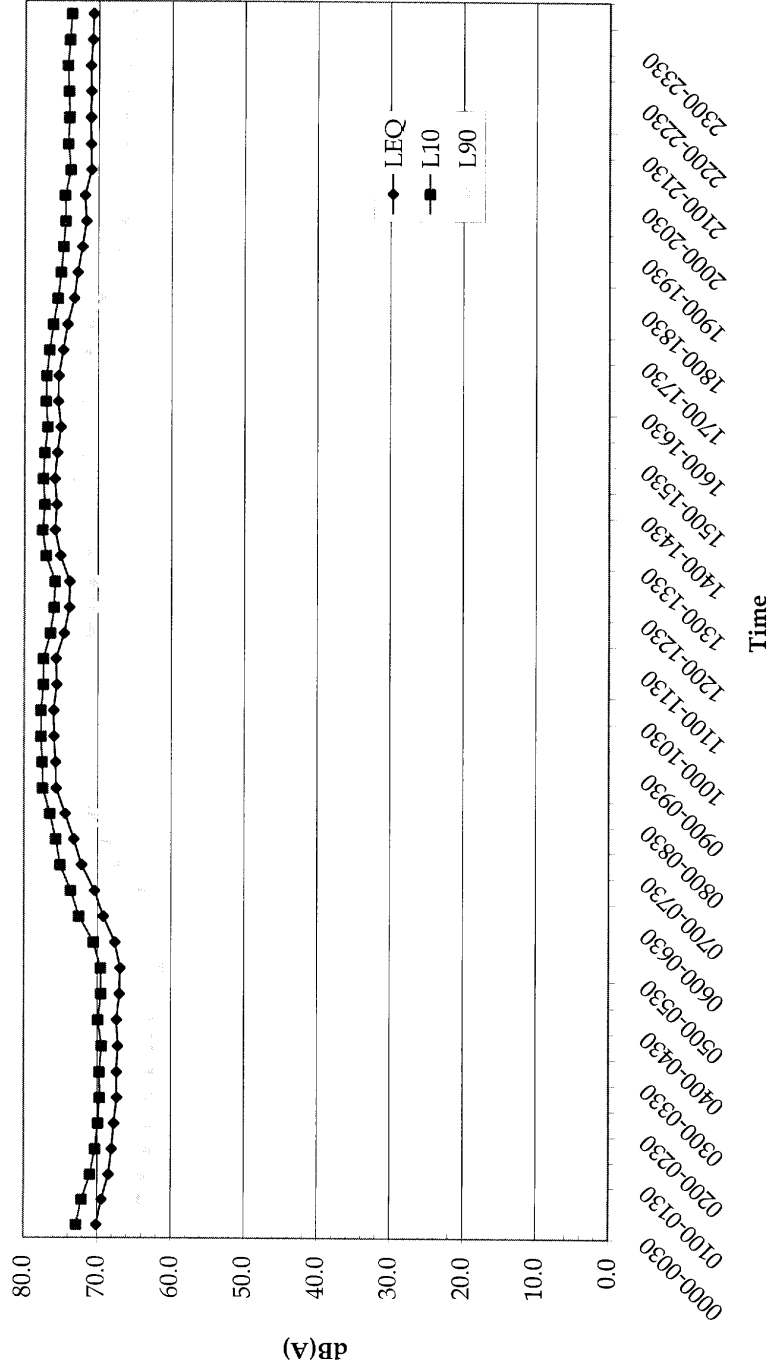
**Noise Control Period Averaged Baselines (LEQ):**

Noise Control Period	Weekdays	Saturdays	Sundays
0700-1900	75.0	74.9	71.3
1900-2300	71.4	71.7	70.9
2300-0700	68.7	69.1	69.1

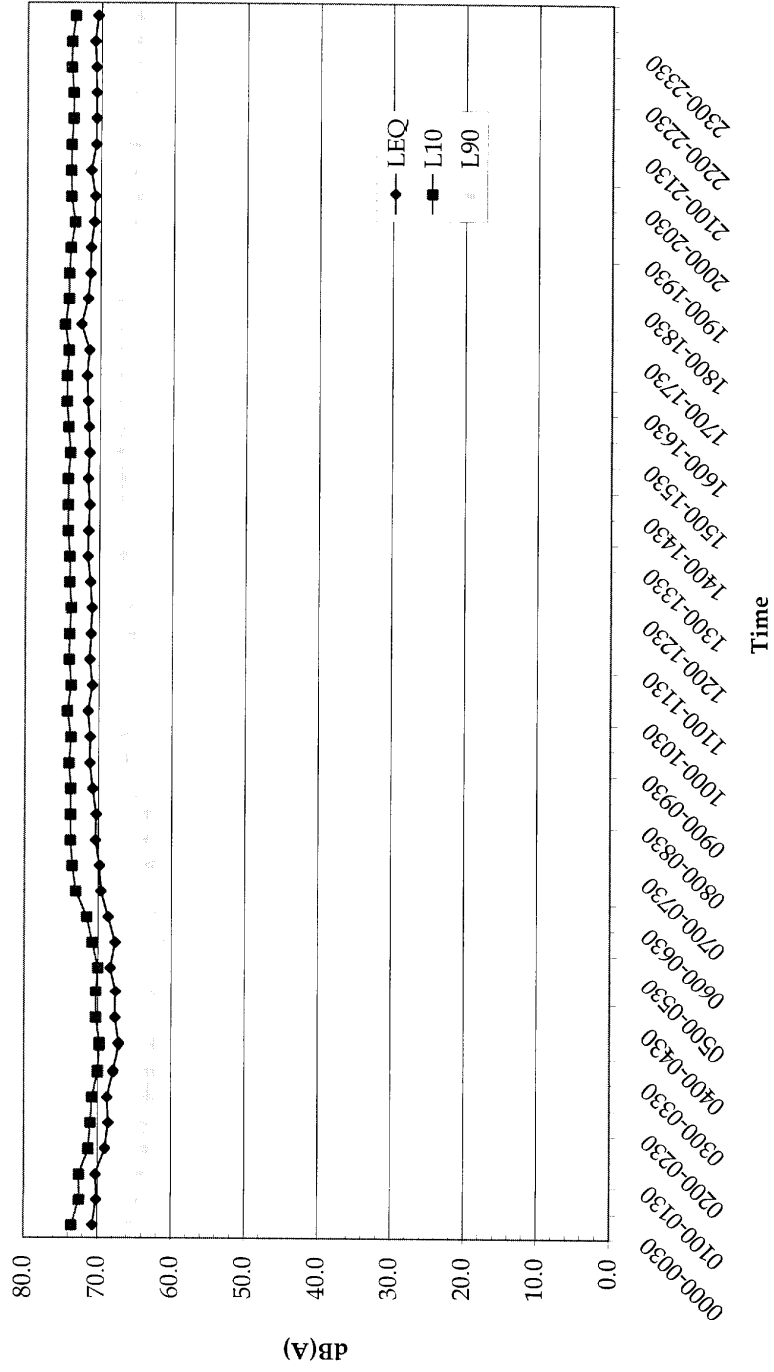
**Whole Day Averaged Baselines:**

Weekday Average LEQ	72.4
Saturday Average LEQ	72.5
Sunday Average LEQ	70.5

35-37A Argyle Street (N2MOKC3) Time History Graph - Weekdays

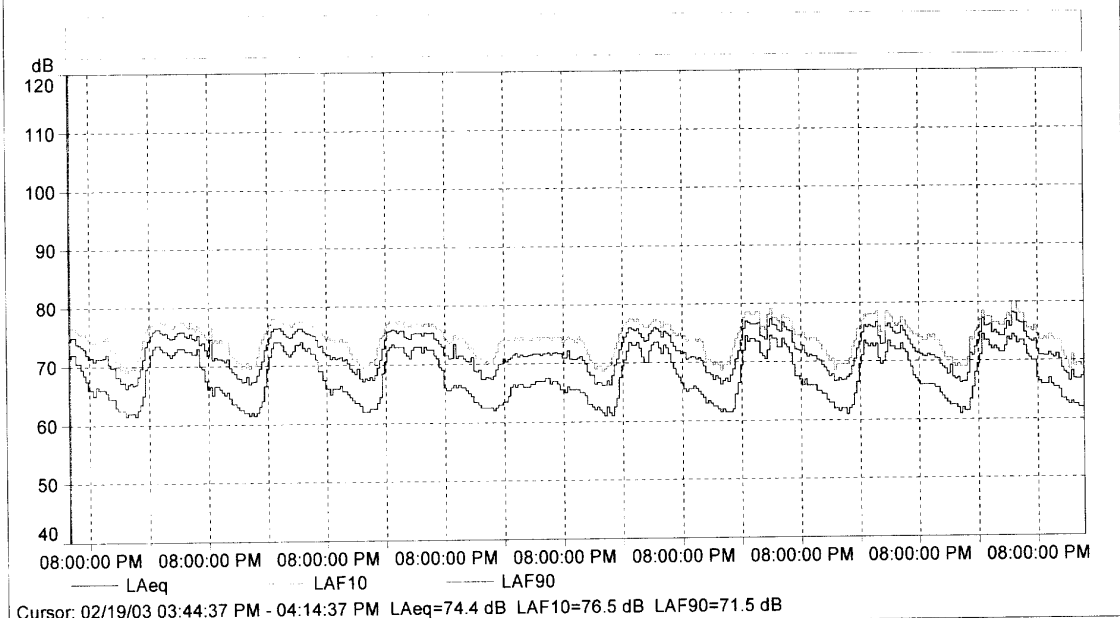


35-37A Argyle Street (N2MOKC3) Time History Graph - Sundays





%Logged in Calculations





%Logged in Calculations

