


Mass Transit Railway Corporation  
Limited

Contract 5032 Mong Kok Station  
New Integrated Entrance C3

Environmental Monitoring & Audit Report  
(April 2003)

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Date: 15 MAY 2003

Mass Transit Railway Corporation Limited

Contract 5032 - Mong Kok Station New Integrated Entrance  
C3

Environmental Monitoring and Audit Report

(April 2003)

### ***EXECUTIVE SUMMARY***

This is the first report prepared to document the environmental monitoring and audit works conducted for the modification works of MTRC Mong Kok Station under Contract 5032 Mong Kok Station New Integrated Entrance C3. Monitoring works for noise impact from the construction works were carried out during the period of April 2003. During this period, the major civil construction activities, including site investigation, minor road slab breaking, site hoarding and noise barrier installation, were carried out within the construction site stated in the Environmental Permit.

With reference to the collected monitoring data and by field observation, environmental conditions of the construction site were said to be satisfactory. There were no exceedance of action and limit level occurred in noise impact monitoring at the agreed sensitive receivers. In addition, no formal prosecution and complaint were received in this reporting period.

As the concerned construction site is located in an urban area of Mong Kok, the noise and dust level are significantly affected by the busy traffic on Argyle Street and Portland Street and the works activities performed on the adjacent URA K2 Development site. Thus the high baseline noise level were recorded during the period of 19 February 2003 to 13 March 2003. Details of the baseline results prepared by the Environmental Team of MTRC have been approved in principal by Environmental Protection Department of HKSAR and copied to the Contractor and the Construction Team of MTRC.

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## **1 INTRODUCTION**

### **1.1 Scope of the Report**

The MTRC Environmental Team lead by the ET leader Dr. Kam Chan was responsible to provide baseline and impact environmental monitoring services for the Project and supervise Contractor's performance on site environmental matters in order to comply with the requirements of the EIA, EM&A Manual and Environmental Permit approved by the Environmental Protection Department of HKSAR.

This is the first impact monitoring report to cover the environmental monitoring works in the period of April 2003 starting from 9 April 2003, on which the Project commenced.

### **1.2 Structure of the Report**

The structure of the report is as follows:

- Section 1: Introduction – details the scope and structure of the report.
- Section 2: Project Information – summarizes the background and scope of the construction activities in this monitoring reporting period and in the coming month.
- Section 3: Environmental Monitoring and Audit Requirements – summary of monitoring parameters, limit/action levels, action plans, recommended environmental mitigation measures and the environmental protection requirements.
- Section 4: Impact Noise Monitoring – summarizes the monitoring programme, locations, equipment and calibration, methodology and results.
- Section 5: Compliance checking which compares the impact monitoring results with the A/L Levels to determine whether the construction activities have any adverse impacts on the environment and gives comment to the Contractor in order to alleviate those impacts.
- Section 6: Actions taken in events of noise level exceedance.
- Section 7: Construction wastes disposal.
- Section 8: Record of complaints from public & EPD.
- Section 9: Status of permits and licences.
- Section 10: Action items for site audits recorded.
- Section 11: Conclusion.

## **2 PROJECT INFORMATION**

### **2.1 Project Background**

The purpose of the Project is to improve the existing Mong Kok Station in order to cater for the increase in entrance demand generated by the Urban Renewal Authority (URA) new development, namely the K2 Development, in the west of the station. An approximate 50m long subway will be constructed between the station and the URA new development. The major works comprise demolishing the existing entrance C3 and establishing a new underground entrance connected to the URA K2 development site. The new entrance would traverse underneath Portland Street and Argyle Street leading to the Station. Location of the work areas are shown on Appendix A Figure EMOKC3-001.

The Project site is located in an urban area of Mong Kok. Its surrounding area consists of highly populated residential buildings and numerous high-rise commercial properties along Argyle Street and Portland Street. Commercial buildings to the north and east of the Project site include Hong Kong & Shanghai Bank Building, Mong Kok Commercial Centre and Hang Seng Bank Branch Mong Kok Building. Most of the residential dwellings which are considered as sensitive receivers are located to the north and west of the proposed Project site. The major noise source is dominated by road traffic noise from Argyle Street, Portland Street and progressing construction activities of URA K2 Development site.

A Baseline Monitoring Report has been issued at April 2003 by MTRC. Baseline levels have been established for noise, by which the construction performance of the Contractor will be measured in meeting required environmental protection standards and requirements under the Environmental Permit, during construction period of the Project.

### **2.2 Project Organisation**

The key parties in an EM&A programme include the Contractor, the Project Engineer or Engineer's representative (ER), the Independent Environmental Checker (IEC), the Environmental Team (ET), and the Environmental Protection Department (EPD). It is currently planned that roles of ER and ET are both undertaken by MTRCL as in many other MTRCL's projects, involving its Project Engineer and Leader of Environmental Team. It is envisaged that such organization structure allow effective communication between the Project Engineer and the ET, and encourage the Contractor to perform with respect to the implementation of the required environmental mitigation measures to satisfy the project proponent's requirements. In addition, the IEC is responsible to check, review, verify and validate the overall environmental performance of the project.

An organization chart showing the line of communication with respect to the EM&A works is provided on Appendix A Figure EMOKC3-002.

### **2.3 Construction Programme**

The construction for modifications to the MTRC Mongkok Station commenced in April 2003 and to be completed by early 2005. MTRC is responsible for the overall programming of the construction works. It is recommended that the programming is such that environmental impacts are reduced as far as possible. Executive summary for the construction programme will be attached when formal approval is given by MTRC in next month's report .

### **2.4 Construction Activities**

Major site construction activities carried out by the Contractor during this reporting period as follows:-

#### Works Area at Argyle/Portland Street Junction

- Site investigation works by boring rig.
- Trial trench excavation on the footpaths.
- Site hoarding and noise mitigation measure installation around station entrance C3.
- Minor road slab breaking around station entrance C3

#### Station Internal Works

- Closing the existing station entrance C3.
- E&M modification works inside hoarding site.

Major site construction activities scheduled to be carried out by the Contractor for next month as follows:-

#### Works Area at Argyle/Portland Street Junction

- Continue site investigation works by boring rig.
- Maintain and adjust the installed noise measures.
- Commence removal of Entrance C3 structure.
- Preparation for sheetpiling works.

#### Station Internal Works

- Continue E&M modification works inside hoarding site.



### **3 ENVIRONMENTAL AUDIT AND MONITORING REQUIREMENTS**

#### **3.1 Monitoring Parameters**

For required noise parameters, refer to Item 5.1 of EM&A Manual March 2003 consented by EPD.

#### **3.2 Environmental Quality Performance Limits**

The environmental quality performance limits for construction noise monitoring are shown as follows:-

For noise sensitive receivers, N1MOKC3 & N2MOKC3, the action & limit levels are shown on Table 3.2a Limit Levels for Construction Noise of Baseline Monitoring Report April 2003 consented by EPD. Action levels are achieved when one complaint received.

#### **3.3 Event/Action Plan**

Whenever monitoring indicates that a particular parameter has an exceed of its limit or action level, the Engineer shall initiate a programme of action, ie. the Event/Action plan. The Event/Action plan for noise exceedance are detailed in Table 5-2 Event Contingency Plan for Construction Noise Monitoring stated in EM&A Manual March 2003.

#### **3.4 Recommended Environmental Mitigation Measures**

A summary of the mitigation measures recommended to be implemented by the Contractor during the construction stages are shown in Appendix I Implementation Schedule of Recommended Environmental Mitigation Measures stated in EM&A Manual March 2003. The summary covers the recommended mitigation measures on construction noise, fugitive dust emission, site waste management.

#### **4 IMPACT NOISE MONITORING**

##### **4.1 Monitoring Methodology & Equipment used**

Noise monitoring was undertaken at the two agreed locations, in the vicinity of the construction site on Argyle Street and Portland Street as follows:-

N1MOKC3 at Residential Building at 43-49A Argyle Street (Argyle House)  
N2MOKC3 at Residential Building at 35-37A Argyle Street

The measurement points for noise monitoring conducted outside the structures were at 1m from the exterior of the sensitive facade. Where the measurements are to be made of noise being received at a place other than a structure. The measurements were at a position 1.2m above the ground in the free field.

At each monitoring location, 30 minutes measurements of Leq, L10 and L90 (in A-Weighting) were conducted at logging interval of 5 minutes. Field information such as monitoring dates and time, weather conditions, dominant noise sources etc. during the monitoring periods were recorded.

Noise monitoring was conducted using B&K sound analysis equipment – B&K SLM2236 with B&K 4231 Calibrator and weather proof microphone.

##### **4.2 Equipment Calibration Details**

###### Noise

A B&K 2236 sound level meter and B&K 4231 calibrator which complies 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 and construction noise impact 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.

##### **4.3 Parameters Monitored**

###### Noise

During this monitoring period, regular noise monitoring were made once a week at logging interval of 5 minutes in 30 minutes.

3 sets of 5 minutes average of Leq, L10 and L90 (in A-Weighting) were measured during this monitoring period with start on 17 April 2003.

**4.4 Monitoring Locations**

Noise

Noise monitoring was undertaken at the following locations:

- N1MOKC3 Residential Building at 43-49A Argyle Street (Argyle House)
- N2MOKC3 Residential Building at 35-37A Argyle Street

Location of the above agreed monitoring stations are shown on Appendix A Figure EMOKC3-001.

**4.5 Monitoring Time, Frequency, Duration and Period**

Noise

Noise monitoring was performed once every six days. Below is the time schedule that noise monitoring was performed in this monitoring period.

Location	Date and Time of Monitoring		Climate
N1MOKC3 (Argyle House)	17/4/03	3:58pm	Clear
	23/4/03	2:53pm	Clear
	30/4/03	2:11pm	Clear
N2MOKC3 (Residential Bldg 35-37A Argyle Street)	17/4/03	3:17pm	Clear
	23/4/03	3:36pm	Clear
	30/4/03	1:17pm	Clear

**4.6 Monitoring Results**

Noise

A summary of the results (Leq30min) recorded during this monitoring period is shown in following table. Relevant details of the noise monitoring results and graphic plots are presented in Appendix B. Having compared the results with the action and limit levels, no exceedance were found.

Summary of Noise Monitoring Results (Leq30min)

Location	N1MOKC3 (Argyle House)						
	Date	Leq (30 min)	Leq corrected (30 min)	L10(30min)	L90(30min)	Allowable limit (30min)	Exceedance
	17/4/03	72.6	66.1	74	70	75	N
	23/4/03	72.9	65.6	73.7	70.5	75	N
	30/4/03	73.2	67.0	73.9	70.4	75	N
	N2MOKC3 (Residential Building at 35-37A Argyle Street)						
	17/4/03	77.1	72.0	79.5	73	75	N
	23/4/03	75.9	68.2	78.1	72.1	75	N
	30/4/03	76.2	69.7	78.4	72.3	75	N

\*All monitoring results in dBA

**5 ASSESSMENT AND AUDIT OF RESULTS**

With reference to the monitoring results obtained, there was no exceedance of action and limit level occurred in noise monitoring. As there were no significant noisy works activities carried out in the first reporting period, the major noise source is mainly generated by the busy traffic on Argyle Street and Portland Street and the construction activities in URA K2 Development site.

The contractor have commenced to set up the required noise mitigation measures and provide monitoring and supervision to control the construction noise generated from the construction site.

**6 ACTION TAKEN IN EVENT OF CONSTRUCTION NOISE LEVEL EXCEEDANCE**

As there was no exceedance in noise limit level recorded at the NSRs during this reporting period, no actions were required to take.

**7 CONSTRUCTION WASTE DISPOSAL**

Only small quantity of excavated material and concrete debris were generated from the trial pit excavation and minor road breaking respectively during this reporting period. The Contractor commenced to set up implementation of the delivery trip ticket system for waste disposal.

**8 RECORD OF COMPLAINTS FROM PUBLIC & EPD**

No complaint was received during this monitoring period.

**9 STATUS OF PERMITS AND LICENCES OBTAINED BY THE CONTRACTOR**

Relevant environmental permit/licence for construction noise, site water discharge and chemical waste disposal are being applied by the Contractor in order to match their construction activities programmed.

## 10 ACTION ITEMS FOR SITE AUDITS

During this monitoring period, weekly joint site audits lead by the senior of MTRC and the Contractor was taken starting on 25/4/03 and concerned items were noted. Status of actions taken by the Contractor can be summarised as follows.

	Description	Status
1.	The Contractor was reminded to have regular check on site to ensure the compliance of relevant environmental regulations, permits and licence	On going
2.	The Contractor was reminded to provide the noise mitigation measures to suit the progressing construction works	On going
3.	The Contractor reminded to remove C&D waste off site as soon as practicable.	On going

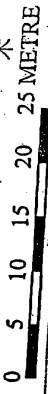
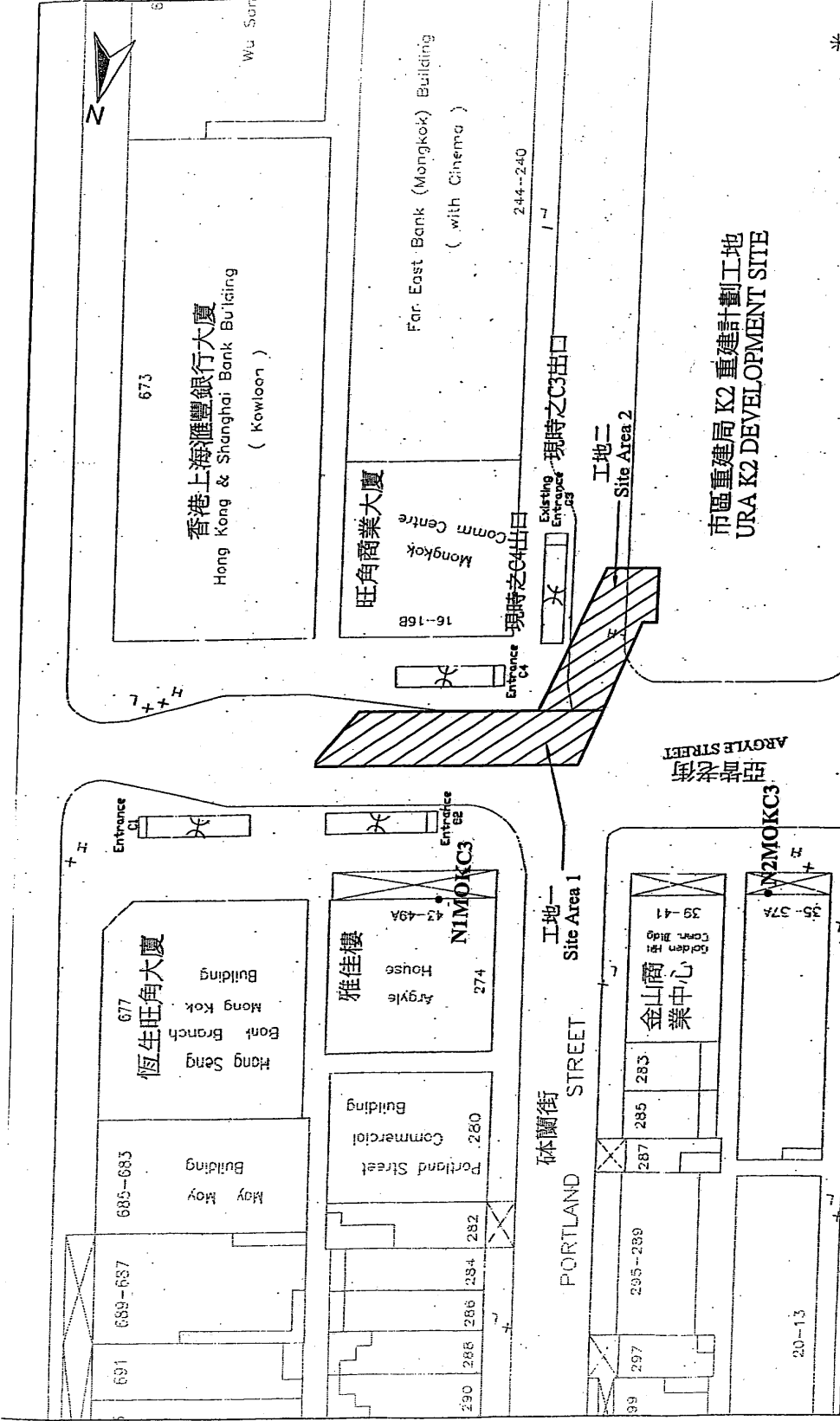
## 11. CONCLUSION

As the project works commenced on 9 April 2003, only some civil construction works including trial trench excavation, site investigation and site hoarding erection were carried out by the Contractor. Therefore, there was no major impact to the nearby environment during this monitoring period.

By field observation, the environmental pollution control measures provided by the Contractor at the project site were generally acceptable. The construction levels recorded during the monitoring period were below the allowable limits. No complaint, notifications of summon and prosecution obtained in this monitoring period. Concerned site environmental items have been raised in the environmental meetings between MTRC and the Contractor to follow up.

## Appendix A

- Reference Figures
- Construction Programme



MONG KOK STATION INTEGRATED ENTRANCE C3  
LOCATIONS OF NOISE SENSITIVE RECEIVERS

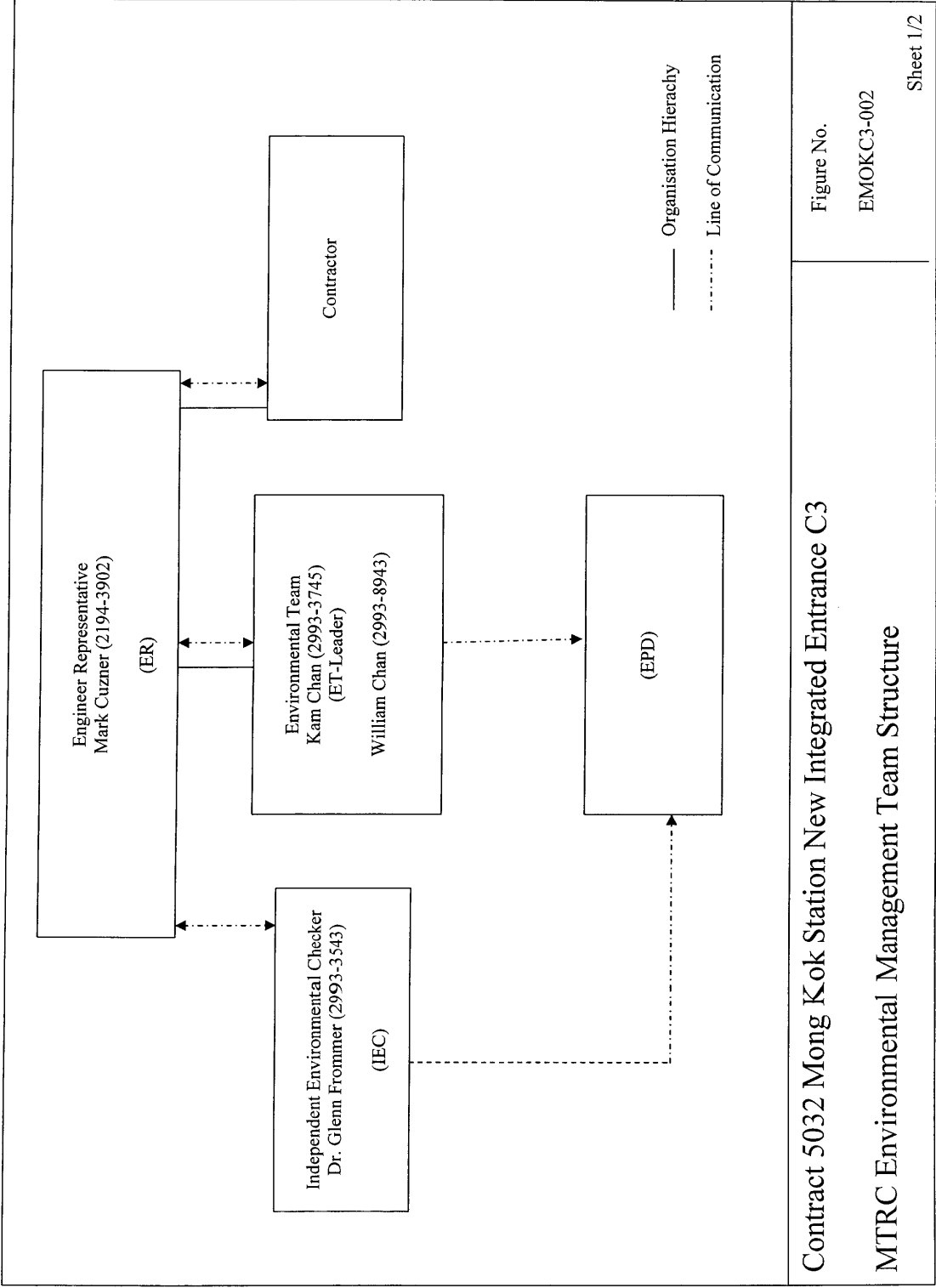
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Date Dec 2002

Figure No. EMOKC3-001

**Mausson**  
MAUSSELL ENGINEERING  
MANAGEMENT CONSULTANTS LTD

FORWARD BY THE ENGINEER TO THE DEPARTMENT OF THE ENVIRONMENT



Contract 5032 Mong Kok Station New Integrated Entrance C3

MTRC Environmental Management Team Structure

Figure No.

EMOKC3-002



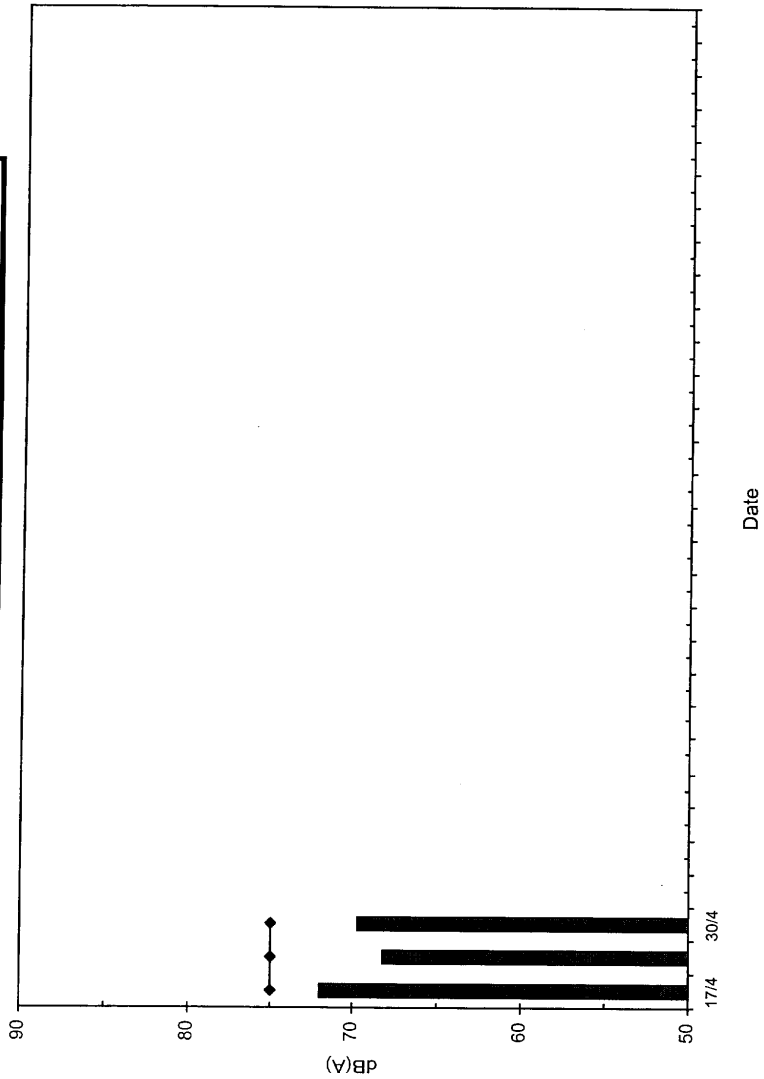
Appendix B

- Environmental Monitoring Data / Chart

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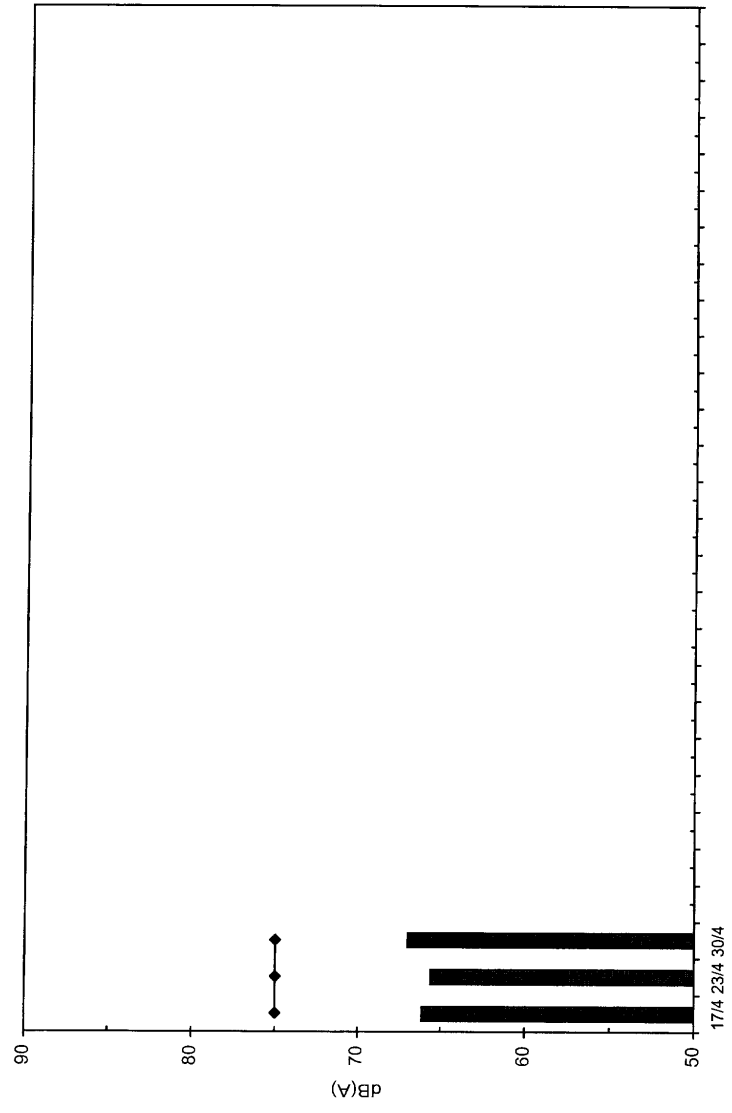
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C5032 - Noise Level at Monitoring Station N2MOKC3 (April 03)



■ Daytime Corrected Noise Level  
◆ Daytime Limit

**C5032- Noise Level at Monitoring Station N1MOKC3 (April 03)**



■ Daytime Noise Corrected Level  
◆ Daytime Limit

Date