

# **UK Automatic Urban Network London Air Quality Network Affiliated Sites**

## **Management Report April to June 2003**

**Prepared for the Department for Environment, Food and Rural  
Affairs (DEFRA), Scottish Executive, Welsh Assembly  
Government and the DoE in Northern Ireland**

<b>Title</b>	UK Automatic Urban Network London Air Quality Network Affiliated Sites Management Report, April to June 2003
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# London Air Quality Network Affiliate Site Management Report April to June 2003

## 1 King's ERG Interface with the Data Dissemination Unit (DDU)

### 1.1 Introduction

This report details the equipment performance for the AURN affiliate sites where ERG is contracted as CMCU by DEFRA under contract number EPG 1/3/168.

The report highlights issues causing data capture to fall below 90% during the quarter and also summarises issues causing annual data capture to fall below 90%.

### 1.2 Data Handling

Between April and June 2003, King's College London Environmental Research Group (ERG) has estimated that over 99% of hourly e-mails arrived at the DDU to meet their timetabled requirements. Accurate figures of punctual e-mails can be obtained from the DDU.

## 2 Site Performance

### 2.1 Scaling of Data for April to June 2003

Scaling of data was carried out as in previous months using the zero and span readings from fortnightly calibration checks. Validation of data was carried out twice daily and reviewed again at the end of each month.

### 2.2 Quality Control / Quality Assurance (QA/QC)

The QA/QC Unit (AEA Technology plc) have carried out one routine equipment audit at the London affiliated AURN sites during this quarter (Camden Kerbside). The audit round started at the end of June, the other sites are scheduled for July and August, these dates are shown in Table 1.

Site	Start Date
Bromley Roadside	18/08/03
Camden Kerbside	30/06/03
Eltham	14/07/03
Haringey Roadside	04/07/03
London Haringey	04/07/03
Hackney	28/07/03
Brentford Roadside	08/07/03
London North Kensington	01/07/03
Lewisham	18/08/03
Marylebone Road	03/07/03
London Southwark	18/08/03
Southwark Roadside	18/08/03
Tower Hamlets Roadside	28/07/03
London Wandsworth	28/07/03

Table 1: QA/QC Audit Dates

### 2.3 Data for April to June 2003

Data capture rates for April, May and June are detailed in Table 2, Table 3, and Table 4. The data capture rates for each month are calculated from valid hourly averages, after excluding data lost due to calibration and the faults discussed. The overall data capture rates for the quarter April to June are detailed in the Table 5.

Specific issues affecting data collection and quality at each site are discussed in sections 2.3.1 to 0. Details of faults are given where data capture rates fall below 90% for the quarter.

Site	Hourly Data Capture % for April 2003				
	CO	PM <sub>10</sub>	NO <sub>x</sub>	O <sub>3</sub>	SO <sub>2</sub>
Bromley Central	89.3		99.6		
Camden Kerbside		99.7	99.3		
Eltham		99.9	98.5	72.6	99.2
Haringey Roadside		99.6	99.7		
London Haringey				99.7	
Hackney	92.6		54.0	91.8	
Hounslow Roadside	0		0		
London North Kensington	97.8	99.0	99.2	99.3	99.2
Lewisham			99.7	79.2	99.7
Marylebone Road	99.6	98.9	99.7	99.6	99.6
London Southwark	97.6		87.9	97.6	97.6
Southwark Roadside	45.3		95.4		95.6
Tower Hamlets Roadside	99.7		99.6		
London Wandsworth			95.4	99.4	

Table 2: Hourly Data Capture % for April 2003

Site	Hourly Data Capture % for May 2003				
	CO	PM <sub>10</sub>	NO <sub>x</sub>	O <sub>3</sub>	SO <sub>2</sub>
Bromley Central	96.0		95.8		
Camden Kerbside		99.5	99.7		
Eltham		99.7	99.7	80.4	99.2
Haringey Roadside		98.7	75.4		
London Haringey				99.7	
Hackney	99.9		99.9	98.4	
Hounslow Roadside	0		0		
London North Kensington	94.5	100.0	87.2	99.7	99.7
Lewisham			99.7	99.7	99.7
Marylebone Road	99.1	98.7	98.9	99.1	93.3
London Southwark	99.3		99.3	99.2	99.2
Southwark Roadside	0		99.7		99.7
Tower Hamlets Roadside	99.6		99.6		
London Wandsworth			99.1	98.9	

Table 3: Hourly Data Capture % for May 2003

Site	Hourly Data Capture % for June 2003				
	CO	PM <sub>10</sub>	NO <sub>x</sub>	O <sub>3</sub>	SO <sub>2</sub>
Bromley Central	99.6		99.6		
Camden Kerbside		98.9	96.4		
Eltham		98.5	98.9	99.2	99.3
Haringey Roadside		99.9	71.3		
London Haringey				99.7	
Hackney	99.2		99.2	91.4	
Brentford Roadside	35.6		56.3		
London North Kensington	96.9	98.1	98.8	97.1	98.2
Lewisham			99.9	99.7	99.9
Marylebone Road	99.7	99.2	99.6	99.7	98.2
London Southwark	99.0		99.6	99.6	99.6
Southwark Roadside	0		99.6		99.6
Tower Hamlets Roadside	98.9		99.2		
London Wandsworth			99.4	99.4	

Table 4: Hourly Data Capture % for June 2003

Site	Hourly Data Capture % for April to June 2003				
	CO	PM <sub>10</sub>	NO <sub>x</sub>	O <sub>3</sub>	SO <sub>2</sub>
Bromley Central	95.0		98.3		
Camden Kerbside		99.4	98.5		
Eltham		99.4	99.0	84.0	99.2
Haringey Roadside		99.4	82.1		
London Haringey				99.7	
Hackney	97.3		84.5	93.9	
Hounslow Roadside	0		0		
Brentford Roadside	11.7		18.5		
London North Kensington	96.4	99.0	95.0	98.7	99.0
Lewisham			99.8	93.0	99.8
Marylebone Road	99.5	98.9	99.4	99.5	97.0
London Southwark	98.7		95.7	98.8	98.8
Southwark Roadside	14.9		98.3		98.3
Tower Hamlets Roadside	99.4		99.5		
London Wandsworth			98.0	99.3	

Table 5: Hourly Data Capture % for April to June 2003

### 2.3.1 Eltham

#### 2.3.1.1 Ozone 84%

8<sup>th</sup> April – 4<sup>th</sup> June

348 Hours

Unstable readings were noticed by the LSO in April. A full service did not resolve the issue; a spare analyser was installed while the original was returned to the workshop for further investigation. Several parts in the measurement system were replaced before the analyser was returned to site. Periods of obviously noisy data were excluded from the data set during this period, repeated ESU visits also led to significant data loss.

### 2.3.2 Haringey Roadside

#### 2.3.2.1 Nitrogen Oxides 82.1%

24<sup>th</sup> May – 9<sup>th</sup> June 2003

386 Hours

The analyser was turned off due to an air conditioning fault.

### **2.3.3 Hackney**

#### **2.3.3.1 Nitrogen Oxides 84.5%**

2<sup>nd</sup> April – 24<sup>th</sup> April 2003 235 Hours

The air conditioning unit malfunctioned leading to increased temperatures inside the monitoring cabin, triggering an alarm on the analyser. This data was excluded from the data set.

24<sup>th</sup> April – 26<sup>th</sup> April 50 Hours

A power cut led to no data being recorded.

### **2.3.4 Hounslow Roadside / Brentford Roadside**

Brentford Roadside has been affiliated in place of Hounslow Roadside which was housed in a local authority building that is now due to be sold. This has necessitated its relocation to a cabin at the roadside of the A4 adjacent to the M4 flyover, outside the building where the previous monitoring equipment was housed. The sample inlet is approximately 10 metres closer to the kerb than the previous site. Data was affiliated from 20<sup>th</sup> June 2003.

### **2.3.5 Southwark Roadside**

#### **2.3.5.1 Carbon Monoxide 14.9%**

16<sup>th</sup> April – 31<sup>st</sup> June 2003 1827 Hours

The infrared source has malfunctioned. The ESU are unable to source a replacement part due to the age and make of the analyzer. Funds for a replacement unit are being sort by the Local Authority.