

# Air Quality Report 2000

\*\*\* developments\*\*\*

## NEW SITES

In 2000 two new nitrogen dioxide sites were added to our monitoring network, one at Harrods (kerbside location) and the second at Chelsea Old Town Hall (intermediate). The data will be used check trends in our air quality management area.

During the 2000/2001 financial year further funding was obtained for a partisol (for measuring particles). This is to be installed on the Earls Court road.

## Annual Summary

- The main breaches of standards were by **ozone, particulate matter and nitrogen dioxide**.
- The number of hours in which ozone was in the moderate band was down from the previous year.
- There were nitrogen dioxide incidents in February, November and December. Some incidents were very local and appear to have affected only the immediate vicinity of specific monitoring sites. Only Cromwell Road and Knightsbridge monitoring sites had nitrogen dioxide in the moderate band.
- There were no exceedences of moderate banding for carbon monoxide or sulphur dioxide during 2000.

## NEW NAQS

In April 2000 the government revised the national air quality standards (NAQS) in line with EC air quality directives. These are the standards that must be achieved within specified timescales and on which local authorities have based their decision to declare air quality management areas.

Exceedences of these standards in the borough are given in the tables at the end of this report. It is important to bear in mind that the standards used for the daily reporting of air quality differ from those used to assess the more longer term objectives.

## Public Information system

The government has reviewed the way it reports and forecasts air quality data to the public. The existing bandings remain the same but a numerical index will be reported alongside to give an indication of the levels within each band. This will take effect during 2001. It is also hoped that it will reduce inconsistencies between different forecasting agencies.

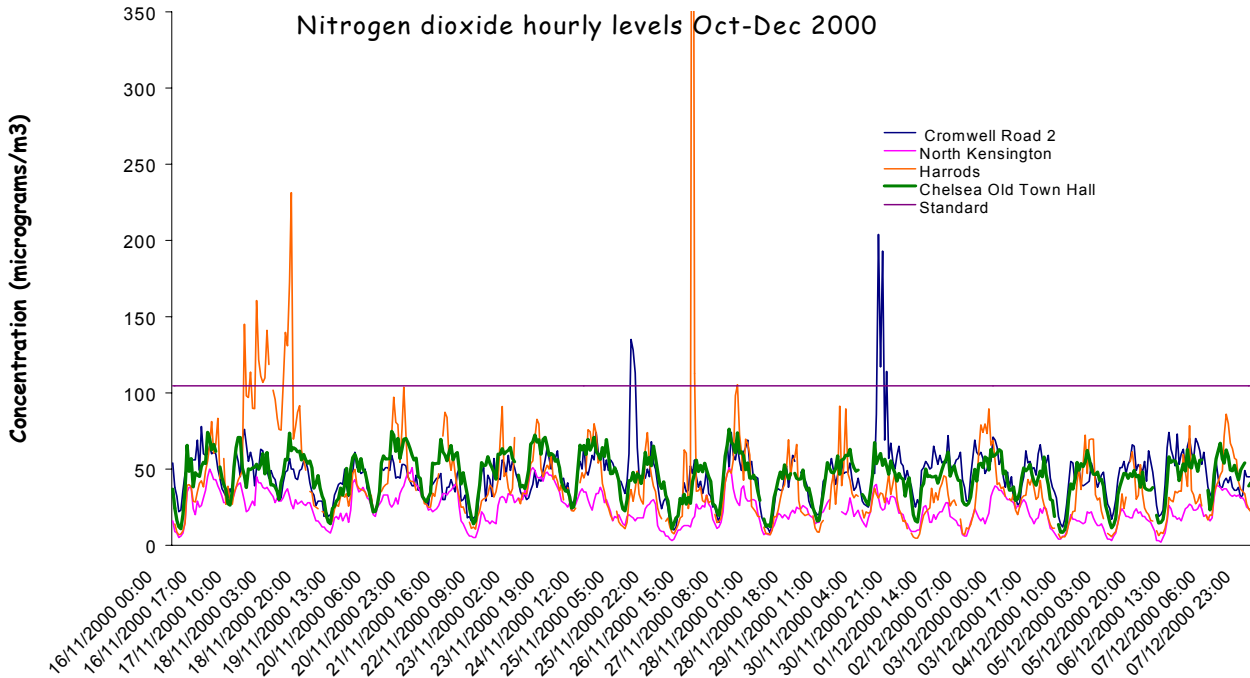
BAND	Index	Health Descriptor
LOW	1-3	Effects are unlikely to be noticed by individuals who know they are sensitive to air pollution.
MODERATE	4-6	Mild effects are unlikely to require actions
HIGH	7-9	Significant effects may be noticed by sensitive individuals and action to avoid or reduce these effects may be needed (e.g.) reducing exposure by spending less time in polluted outdoor areas). Asthmatics will find that their reliever inhaler is likely to reverse the effects on the lung.
VERY HIGH	10	The effects on sensitive individuals described for High levels of pollution may worsen.

For more information view the following website <http://aeat.co.uk/netcen/airqual/dailystats/standards/html>

# Nitrogen Dioxide

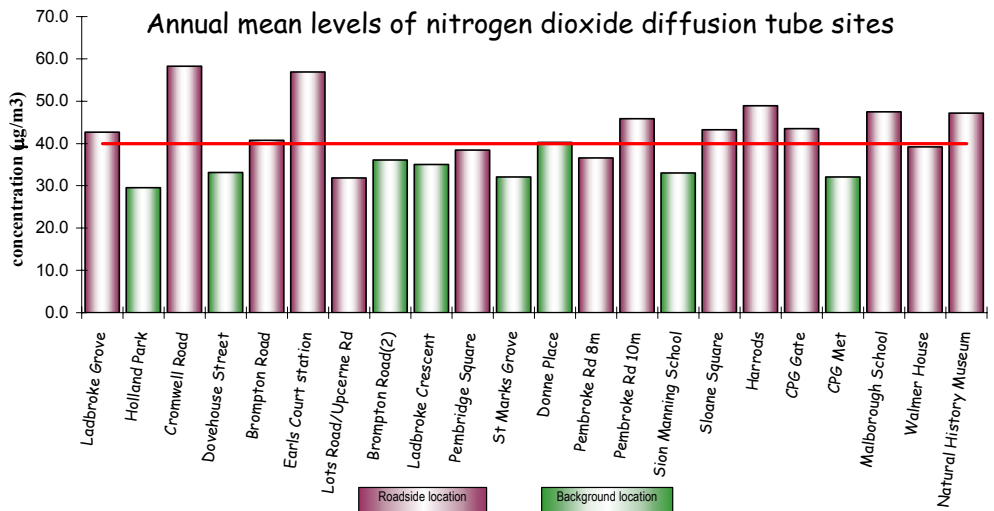
There were incidents throughout the year, these were mainly sporadic exceedences peaking during the morning or evening traffic. There was one very high peak observed at one location but this was very unusual. It may have been due to some local unknown temporary source that lasted less than an hour. Most exceedences of the national air quality standard were isolated hours rather than over a continuous period of time.

A clear daily pattern can be seen with the kerbside and roadside locations generally showing the highest levels.



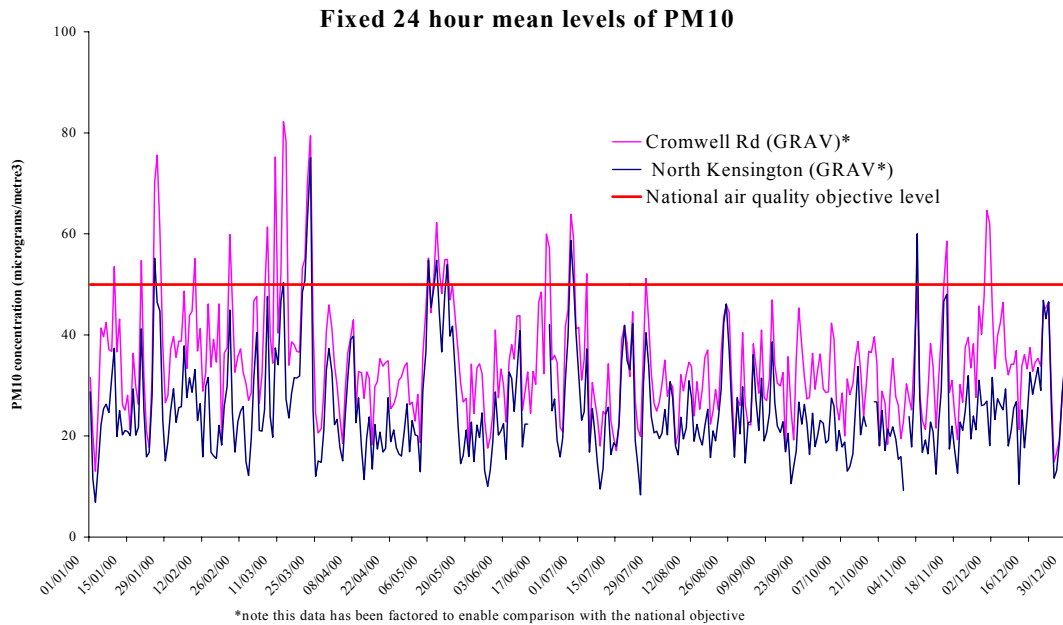
## Diffusion tube survey

Monitoring using diffusion tubes (simple devices which allow the estimation of levels) allows monitoring at a greater number of locations. This network indicates that it is predominately roadside and near roadside locations which exceed the annual mean standard.



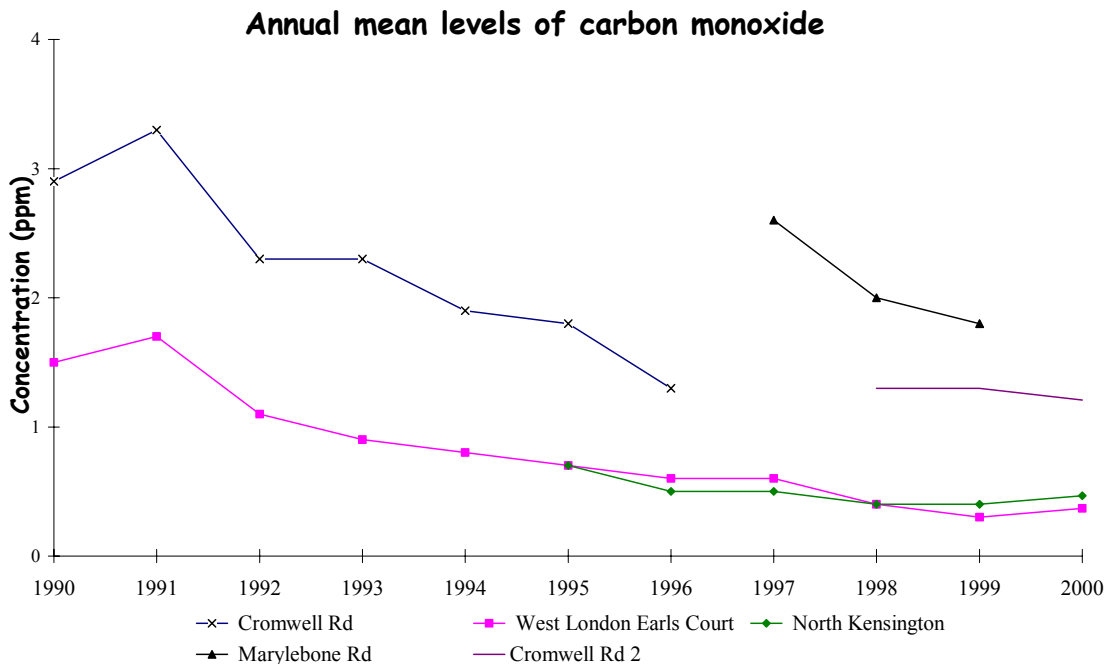
## Particulate Matter (PM10)

In 2000 average levels of PM10 in the borough were down slightly compared to 1999. There were a number of hours when PM10 levels showed very high peaks but these were generally short lived. These events are often caused by road works. Levels are almost always higher at the roadside though a similar pattern is usually followed.



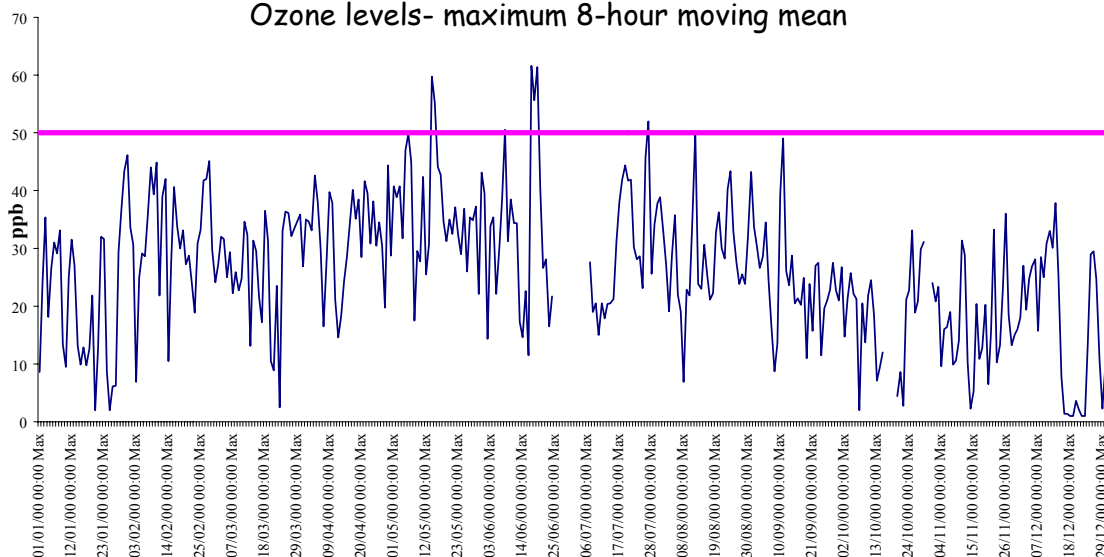
There were exceedences of the fixed 24 hour means at both the background and roadside sites with the greatest number occurring at the roadside location.

## Carbon monoxide



Carbon monoxide levels have declined since the 1990's however for number of years the levels have stabilised. There were no breaches of the objective levels at the sites measured in the borough.

Ozone levels- maximum 8-hour moving mean



**Ozone**

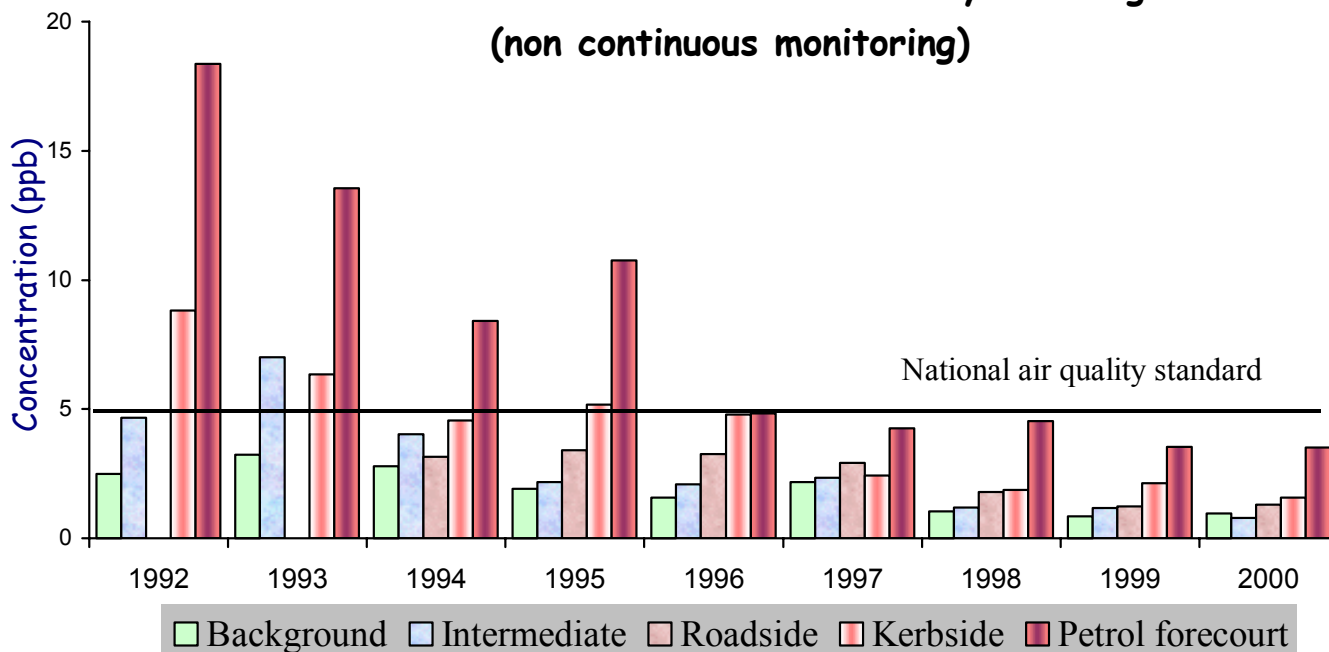
Ozone levels are generally highest in rural and suburban locations but episodes can still affect central London.

The highest values of ozone are normally recorded during summer. However moderate ozone was measured briefly at North Kensington during March due to unusually sunny and mild weather early on. More widespread episodes occurred in May, June, July and the most significant in August. There were a total of 114 hours of ‘moderate’ ozone during the year at North Kensington. The number of moderate hours of ozone has gone down compared to 1999. However annual average levels have increased overall since monitoring began in 1995.

**Benzene**

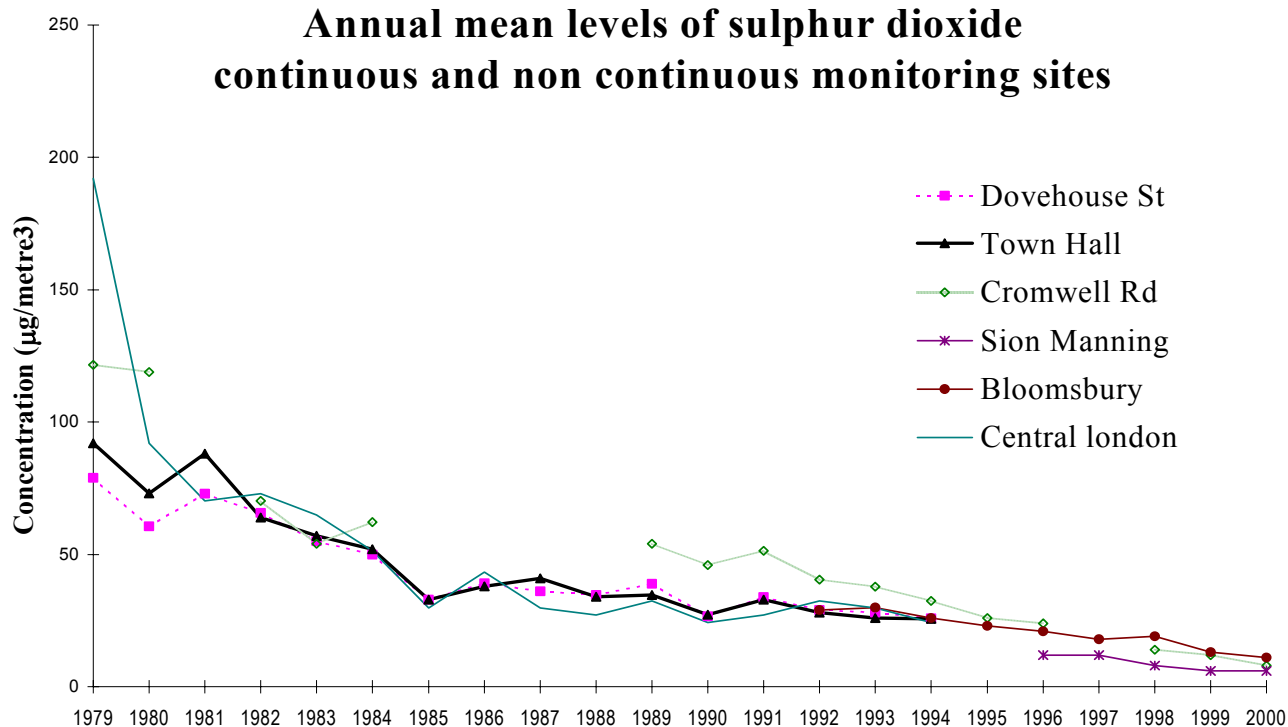
Benzene levels in the borough, whilst not monitored continually are estimated using a diffusion tube technique. The level of benzene has declined over the years and the results indicate that the concentrations measured are below the government’s current objective level.

**Annual mean benzene levels in the Royal Borough (non continuous monitoring)**



## Sulphur dioxide

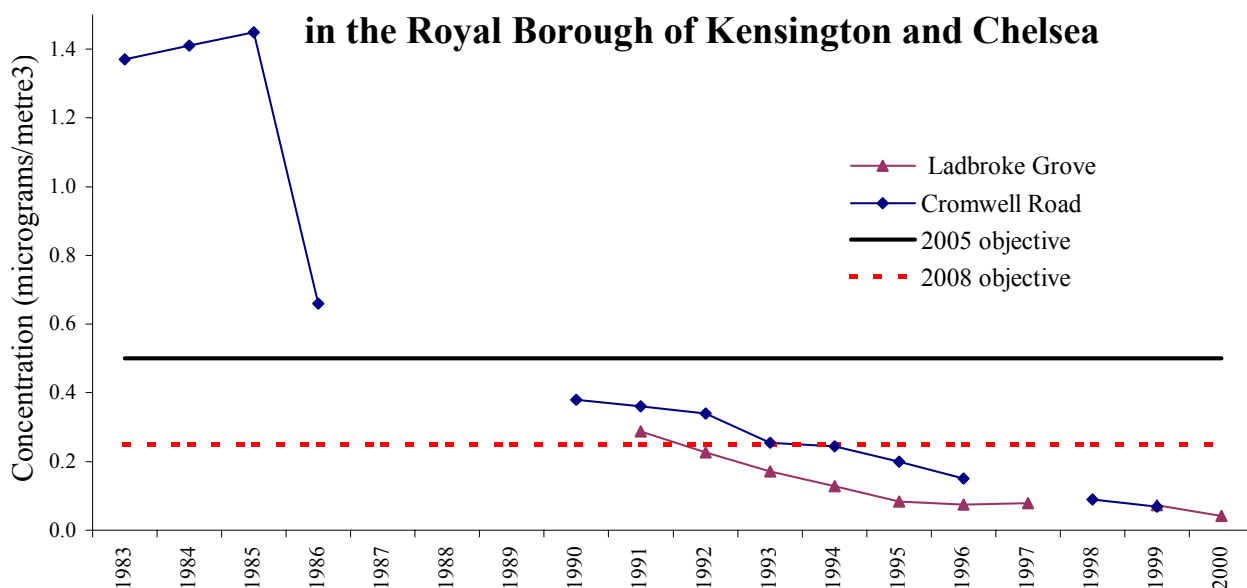
### Annual mean levels of sulphur dioxide continuous and non continuous monitoring sites



There were no exceedences of the government's air quality strategy objectives for sulphur dioxide during 2000. In addition annual average levels have been steadily declining for some years. Sulphur dioxide is largely found in heavy fuel oils and coal, the use of which has declined substantially in cities.

## Lead

### Annual mean Lead levels in the Royal Borough of Kensington and Chelsea



Lead levels have also been declining for many years mainly as a result of the progressive reduction of lead in petrol and the gradual phasing out of leaded petrol altogether.

# Air Quality Statistics 2000

## DEFRA bandings

### Nitrogen Dioxide - Number of hours in DEFRA banding

Location	Low	Moderate	High	Very High
North Kensington	8467	0	0	0
West London	8587	0	0	0
Cromwell Road 2	8216	2	0	0
Knightsbridge	6415	3	0	1
Chelsea Old TH	2216	0	0	0

### Sulphur Dioxide - Number of 15 min periods in DEFRA banding

Location	Low	Moderate	High	Very High
North Kensington	32970	0	0	0
Cromwell Road 2	33470	0	0	0
Marylebone Road	33032	0	0	0

### Ozone - Number of hours in DEFRA banding

Location	Low	Moderate	High	Very High
North Kensington	8246	114	0	0
Marylebone Road	8694	0	0	0

### Particulate Matter - Number of hours in DEFRA banding

Location	Low	Moderate	High	Very High
North Kensington	8369	47	0	0
Cromwell Road 2	8337	160	3	0
Marylebone Road	7707	967	73	0

### Carbon monoxide - Number of hours in DEFRA banding

Location	Low	Moderate	High	Very High
North Kensington	8382	0	0	0
West London	8580	0	0	0
Cromwell Road 2	8673	0	0	0
Marylebone Road	8444	0	0	0

# Strategic Government Objectives

## Nitrogen dioxide

Location	National air quality standard	Number of hours above standard	Exceedence of national objective for 2005
North Kensington	Hourly mean > 200µg/ m <sup>3</sup> (104.6 ppb)	3	No
West London		0	No
Cromwell Road 2		12	No
Knightsbridge		52	Yes
Chelsea Old TH		2	No
Marylebone Road		100	Yes

Location	National air quality standard	Annual Mean	Exceedence of national objective for 2005
North Kensington	Annual mean > 40µg/m <sup>3</sup> (21ppb)	40 (21)	yes
West London		53 (28)	yes
Cromwell Road 2		88 (46)	yes
Knightsbridge		74 (39)	yes
Chelsea Old TH		86 (45)	yes
Marylebone Road		92 (48)	yes

## Carbon Monoxide

Location	National air quality standard	Number of 8 hour periods > standard	Exceedence of national objective for 2003
North Kensington	8 hour rolling mean > 11.6µg/m <sup>3</sup> (10ppm)	0	No
West London		0	No
Cromwell Road 2		0	No
Marylebone Road		0	No

## Ozone

Location	National air quality standard	Number of exceedences	Exceedence of provisional national objective
North Kensington	8 hour rolling mean >50ppb	7	No
Marylebone Road		0	No

## Sulphur Dioxide

Location	Number of 15 min > 266µg/m <sup>3</sup> (100ppb)	Number of days > 125µg/m <sup>3</sup> (47ppb)	Number of hours > 350µg/m <sup>3</sup>	Exceedence of national objective for 2004/5
North Kensington	0	0	0	No
Cromwell Road 2	0	0	0	No
Marylebone Road	0	0	0	No

## Particulate matter

Location	National air quality standard (gravimetric factor applied)	Number above 24 hour mean >50µg/m <sup>3</sup>	Exceedence of national objective for 2005
North Kensington	24 hour mean >50µg/m <sup>3</sup>	11	No
Cromwell Road 2		31	No
Marylebone Road		159	Yes
Location	National air quality standard (gravimetric factor applied)	Annual mean	Exceedence of national objective for 2005
North Kensington	Annual mean >40µg/m <sup>3</sup>	26	No
Cromwell Road 2		35	No
Marylebone Road		48	Yes

The Marylebone Road is a kerbside location in Westminster. Data from this site is included for completeness. In April 2000 the national air quality standards used to measure the government's strategic objectives were revised.