

**Part IV of the Environment Act 1995  
Local Air Quality Management**

**Air Quality within the Kennet District  
The 2005 Progress Report**



**April 2005**

# Air Quality within the Kennet District - A Progress Report

## Executive Summary

This Progress Report of the air quality within the Kennet district has been compiled as a consequence of the Air Quality (Amendment) Regulations 2002.

The report continues the revised phased approach to the assessment of local air quality whereby the emphasis is that local authorities should only undertake a level of assessment that is commensurate with the local risk of air quality objectives being exceeded.

It follows on from the first stage of the revised process, the Updating and Screening Assessment published in May 2003 and the Progress Report submitted in April 2004.

This in turn continued the previous work carried out concerning the air quality within the Kennet district, which had concluded with a stage two review and assessment of the air quality completed in 2000.

This progress report has been compiled in line with the Technical Guidance document LAQM.PRG(03) and concentrates on reporting new monitoring data compiled since the previous reporting stage and information concerning local development likely to have an impact upon air quality.

The report takes account of a proposed change to an industrial process located outside the Kennet border, which has the potential to impact upon the local air quality.

# CONTENTS

	<u>Page No.</u>
Executive Summary	
<u>Chapter 1</u> <u>Introduction</u>	
The need for a review of air quality	4
The phased approach to review and assessment	4
The Kennet district	5
<u>Chapter 2</u> <u>Air quality monitoring</u>	
Nitrogen dioxide monitoring – Traffic impact study	6
Table 2.1 – Nitrogen dioxide monitoring results	9
Table 2.2 – Corrected nitrogen dioxide monitoring data for 2005 and 2010 for all Kennet DC monitoring locations.	10
Discussion of nitrogen dioxide monitoring	10
Nitrogen dioxide monitoring – conclusions	13
<u>Chapter 3</u> <u>Other pollution monitoring</u>	
Additional monitoring	15
Results and discussion of results	16
Nitrogen dioxide monitoring	16
Table 3.3 – Nitrogen dioxide monitoring	16
Sulphur dioxide monitoring	17
Table 3.4 – Sulphur dioxide monitoring	17
VOC monitoring	17
Table 3.5 – VOC monitoring	17
Additional monitoring – Conclusions	18
<u>Chapter 4</u> <u>New local developments</u>	
Industrial sources	19
Planned developments	19
<u>Chapter 5</u> <u>Conclusions to the 2004 progress report</u>	
Conclusions to the report	20
<u>Appendix 1 – Locations of the pollution monitoring sites</u>	21
Map 1 – Location of NO <sub>2</sub> monitoring sites – Devizes	
Map 2 – Location of NO <sub>2</sub> monitoring sites – Marlborough	
Map 3 – Location of NO <sub>2</sub> monitoring sites – District	

## **CHAPTER 1: Introduction**

### **1.1 The need for a review of air quality**

1.1.1 As a consequence of the Environment Act 1995 and subsequent regulations, local authorities are required to review and assess the air quality in their area. These laws form the cornerstone of local air quality management (LAQM), which in turn forms a key part of the UK government strategy to achieve the UK Air Quality Objectives.

### **1.2 The phased approach to review and assessment**

1.2.1 The principal underlying the local air quality management process is one that local authorities should only undertake a level of assessment that is commensurate with the risk of an air quality objective being exceeded locally.

1.2.2 Historically, up to a four stage process has been undertaken in order to review and assess the air quality within local authority areas, and in some cases the process continues to this day with the declaration of Air Quality Management Areas (AQMA's) as the latest stage in the process.

1.2.3 For other authorities where air quality is less of a problem, the first round of reviewing and assessing the air quality stopped at an earlier stage in the process. Following a second stage review in 2000, the Kennet District Council declared that the air quality standards would be met by the prescribed deadlines.

1.2.4 However, with the ongoing research into air quality and the causes of pollution, combined with increasingly more accurate monitoring equipment and modelling procedures, several air quality standards have been refined and are included into the next phase of the United Kingdom's local air quality management procedure.

1.2.5 The first stage of the revised review process took the form of an Updating and Screening Assessment. The Kennet District Council report was completed in May 2003 and concluded that further, detailed assessment was not required. The assessment was based upon a checklist approach in order to identify matters that have changed since the first round was completed in 1999 and that may require further assessment.

1.2.6 This report was followed in April 2004 by a Progress Report which concluded that there have been no significant changes within the Kennet district likely to impact upon air quality.

1.2.7 Further submissions of Updating and Screening Assessments of Air Quality must also be made during the first four months of 2006 and 2009, with a 'Detailed Assessment' (if required) or 'Progress Report' due by the end of 2007 and 2010. Progress Reports must also be submitted by the end of April 2005 and 2008. This progress report is submitted to meet the requirement for 2005.

### **1.3 The Kennet district**

- 1.3.1 Kennet is one of five District Councils in the County of Wiltshire. It covers approximately 375 square miles and is home to about 75,000 people. The main settlements are the historic towns of Devizes and Marlborough. Pewsey, Ludgershall and Tidworth provide further centres of population, although half the area's population lives in the extensive network of scattered villages.
- 1.3.2 The district is mainly rural and agricultural in character. About two thirds of the district is included within the North Wessex Downs Area of Outstanding Natural Beauty and a further 20 per cent is designated a Special Landscape Area. The major physical features are the extensive chalk downlands of the Marlborough Downs, to the North, and Salisbury Plain to the South. The Vale of Pewsey, which runs from west to east, roughly midway through the district, separates these upland areas. The main railway service and the Kennet and Avon Canal also follow this route. The River Kennet and the Salisbury Avon have cut other significant valleys into the chalk. To the west of the District, the chalk uplands give way to the clay vale in the western part of the County.
- 1.3.3 Employment and economic activity is scattered. Historically it has centred on agriculture and Ministry of Defence Establishments. Structural changes have come from reduced opportunities in agriculture and changes in military presence following defence reviews. Unemployment is below average, but many people commute to jobs outside the district.

## **CHAPTER 2: Air quality monitoring results**

### **2.1 Nitrogen dioxide monitoring – Traffic impact study**

- 2.1.1 Kennet District Council maintains a full program of diffusion tube based monitoring for nitrogen dioxide from locations sensitive to traffic levels across the district. The monitoring was enhanced during 2004 with the addition of a second survey to include more sites to help assess the potential impact of a change to an industrial process located in a neighbouring authority, the Lafarge Cement works in Westbury, Wiltshire.
- 2.1.2 The locations chosen to site the extra monitoring were based upon factors other than sensitivity to traffic flows as with the original survey. As such, the results from the extra monitoring established are discussed separately in Chapter 3 – Other Pollution Monitoring.
- 2.1.3 Maps are included in Appendix 1 to this report showing the locations of the monitoring sites currently employed, although historically a number of other locations have been employed. Map 1 shows the sites in the Devizes area, Map 2 the Marlborough area and Map 3 highlights locations in the rest of the district.
- 2.1.4 Table 2.1 set out below sets out the monitoring data collected for the 20 sites used for the main nitrogen dioxide survey employed as within the Kennet district, plus a further three sites which were replaced, but for which excellent historical data exists. The data has been adjusted to take account of laboratory bias (see 2.1.7 – 2.1.8).
- 2.1.5 The definition of the type of monitoring sites specified are taken from Appendix A to the Technical Guidance document LAQM.TG(03) and are summarised below:
- Kerbside – a site sampling within 1m of the edge of a busy road.
  - Roadside – A site within 1m of the kerbside of a busy road and the back of the pavement, normally between 5 and 15m of the road.
  - Urban Centre – non-kerbside but located in an area representative of typical population exposure.
  - Urban Background – Urban location distanced from sources and representative of urban background conditions.
  - Suburban – located in a residential area on the outskirts of a town.
  - Rural – open country location in low population density
- 2.1.6 Each monitoring site has been selected for a variety of reasons and a short summary for each site, is provided below:
- Devizes Police Station – Roadside side, adjacent to the busy New Park Street and one of the 5 KDC sites reported to netcen as part of the UK wide survey and considered as a worst case site in previous air quality assessments.
  - Devizes Health Centre – urban centre, no longer in use.

- Brickley Church, Devizes – background site located within housing estate. Results reported to netcen.
- Wansdyke School, Devizes – suburban school. Part of netcen survey.
- Devizes Market Place – urban centre, popular and busy shopping area, home to twice-weekly markets and occasional Farmers and French markets. The Market place is also used for car parking when no market is taking place. Relevant location for public exposure.
- Devizes Wadworths – Roadside site at roundabout at edge of town centre.
- Devizes Roses – Roadside, originally collocated with real time analyser (now defunct) but beside pedestrian crossing at edge of town shopping area.
- Devizes St Peters School – Roadside school, site no longer in use.
- Shanes Castle, Devizes – Kerbside property, between two main roads, opposite St Peters School and undergoing renovation as a domestic premises. Site considered as a worst case scenario for potential future relevant exposure.
- Devizes Town Hall – A new roadside site located in an area, which is part of proposed traffic reduction scheme for Devizes.
- Devizes Hillworth Road – A new roadside site, within scheme mentioned above.
- Windsor Drive, Devizes – New roadside site, adjacent to new cross-town route and close to a proposed housing development.
- Pewsey Police – Urban centre, village location beside busy through road. Site no longer in use.
- Potterne School – Roadside primary school on tight bend and steep hill.
- Ludgershall – Urban background site, village crossed by ‘A’ road.
- Collingbourne Ducis – Roadside school location beside ‘A’ road and slight slope to road.
- Avebury School – Urban background, school situated away from ‘A’ road.
- Pewsey Church – Urban Centre, village location beside busy road, which bisects village.
- Marlborough Church – Roadside site adjacent to busy A4 which runs through the town centre. Located at western end of the town.

- Marlborough High Street – as above, but in centre of the high street
- Marlborough Leisure Centre – Urban background site, reported to netcen.
- Marlborough Heard Street – Kerbside site adjacent to busy road. Worst case scenario for housing in Marlborough as domestic residences immediately adjacent to the road at a maximum distance of 5 meters from the kerb.

2.1.7 The data presented in table 2.1 has been adjusted for laboratory bias in accordance with the procedures set out in the spreadsheet made available on the University of West of England Air Quality website; <http://www.uwe.ac.uk/aqm/review/diffusiontube280205.xls>

2.1.8 The nitrogen dioxide tubes used for the main survey are analysed by Lambeth Scientific Services using a 50% TEA in acetone method. The correction factors obtained were as follows;

- 2001 - 1.09
- 2002 - 1.15
- 2003 - 1.05
- 2004 – 1.08

2.1.9 Two air quality objectives have been adopted for nitrogen dioxide in the UK, an annual mean concentration of  $40\mu\text{g}/\text{m}^3$  and a 1-hour mean concentration of  $200\mu\text{g}/\text{m}^3$ , not to be exceeded more than 18 times per year. The objectives are to be achieved by the end of 2005.

2.1.10 Additionally, the first European daughter directive also sets limit values for nitrogen dioxide, which has been transposed into UK legislation. The directive objectives mirror the UK air quality objectives set out in 2.1.9, although they are to be achieved by the 1<sup>st</sup> Jan 2010.

2.1.11 The data presented in table 2.1 can be compared against the UK air quality objectives for nitrogen dioxide by projecting the measured roadside concentrations forward to 2005 and 2010 using the correction factors and methodology set out in Box 6.6 of the guidance document LAQM.TG(03). These correction factors have been calculated and are set out below. The corrected data is presented in table 2.2 and discussed in section 2.2 of this report.

Year to be corrected	Correction Factor
2003 to 2005	0.948
2003 to 2010	0.780
2004 to 2005	0.975
2004 to 2010	0.802

**Table 2.1 – Summary of nitrogen dioxide monitoring results (adjusted for laboratory bias) – Kennet District Council**

<b>Kennet District Council</b>												
<b>Nitrogen dioxide Survey - Annual Average Levels</b>												
Site	Site Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Devizes Police Station	Roadside	31	31	34	26	30	33	23	27	29	29	28
Devizes Health Centre	Urban Centre	20	16	24	21	19	16	18	20	24	-	-
Brickley Church, Devizes	Urban B'ground	14	14	18	20	14	16	13	21	20	19	18
Wansdyke School	Suburban	12	11	16	15	12	11	11	14	14	12	17
Devizes Market Place	Urban Centre	-	-	-	21	22	22	19	22	25	21	20
Devizes Wadworths	Roadside	-	-	-	31	32	27	23	33	30	31	26
Devizes Roses	Roadside	-	-	-	45	50	53	38	41	38	40	38
Devizes St.Peters School	Roadside	-	-	-	-	-	26	22	24	26	16	-
Shanes Castle, Devizes	Kerbside	-	-	-	-	-	-	-	-	-	47	36
Devizes Town Hall	Roadside	-	-	-	-	-	-	-	-	24	30	23
Devizes Hillworth Road	Roadside	-	-	-	-	-	-	-	-	23	30	31
Windsor Drive, Devizes	Roadside	-	-	-	-	-	-	-	-	-	22	23
Pewsey Police	Urban Centre	26	20	27	25	20	21	19	22	23	-	-
Potterne School	Roadside	23	19	24	25	19	20	21	22	17	16	15
Ludgershall	Urban B'ground	17	15	22	20	11	14	15	17	16	16	16
Collingbourne Ducis	Roadside	19	15	21	20	11	14	13	16	20	18	20
Avebury School	Urban B'ground	16	11	14	17	7	12	10	13	14	14	16
Pewsey Church	Urban Centre	16	15	19	17	11	15	15	16	17	13	16
Marlborough Church	Roadside	38	32	37	34	33	35	42	35	30	33	30
Marlborough High St.	Roadside	-	-	-	-	26	31	25	35	34	33	35
Marlborough Leisure C.	Urban B'ground	-	-	-	-	-	-	11	16	19	14	18
Marlborough Heard St.	Kerbside	-	-	-	-	-	38	33	33	34	34	34

all data quoted in  $\mu\text{g}/\text{m}^3$

**Table 2.2 - Corrected nitrogen dioxide monitoring data to 2005 and 2010 for all Kennet district monitoring locations (for data from 2003 and 2004)**  
(all data quoted in  $\mu\text{g}/\text{m}^3$ )

Site	Ratified 2003 level	Predicted 2005 level	Predicted 2010 level	Ratified 2004 level	Predicted 2005 level	Predicted 2010 level
Devizes Police Station	29	27	23	28	27	22
Brickley Church, Devizes	19	18	15	18	18	14
Wansdyke School, Devizes	12	11	9	17	17	14
Devizes Market Place	21	20	16	20	20	16
Devizes Wadworths	31	29	24	26	25	21
Devizes Roses	40	38	31	38	37	30
Shanes Castle, Devizes	47	45	37	36	35	29
Devizes Town Hall	30	28	23	23	22	18
Devizes Hillworth Road	30	28	23	31	30	25
Windsor Drive, Devizes	22	21	17	23	22	18
Potterne School	16	15	12	15	15	12
Ludgershall	16	15	12	16	16	13
Collingbourne Ducis	18	17	14	20	20	16
Avebury School	14	13	11	16	16	13
Pewsey Church	13	12	10	16	16	13
Marlborough Church	33	31	26	30	29	24
Marlborough High St.	33	31	26	35	34	28
Marlborough Leisure Centre	14	13	11	18	18	14
Marlborough Heard St.	34	32	27	34	33	27

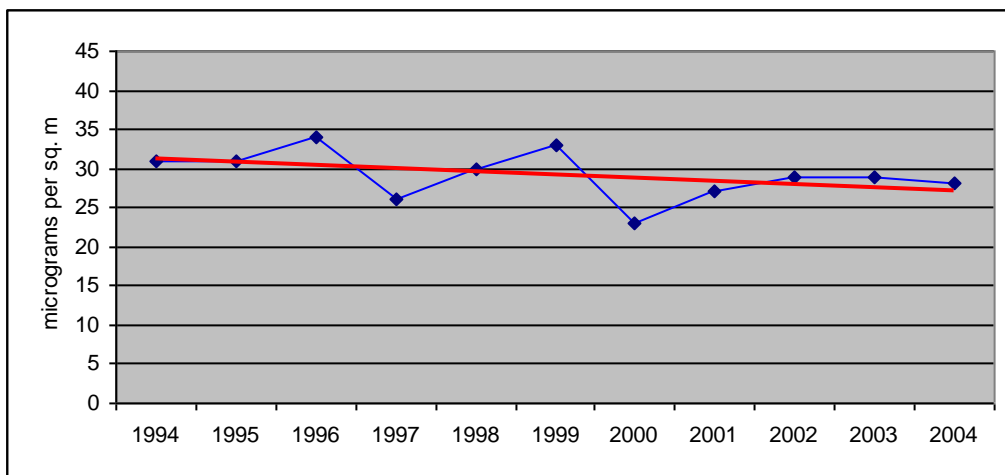
## 2.2 Discussion of nitrogen dioxide monitoring

2.2.1 Once again the data presented in Tables 2.1 and 2.2 back up the conclusions of previous air quality reports in that the UK annual mean air quality objective for nitrogen dioxide will be met within the Kennet district.

2.2.2 The one site of concern reported in the 2003 progress report, located at Shanes Castle has shown a notable improvement for the 2004 with the corrected 2003 annual mean level of  $47\mu\text{g}/\text{m}^3$ , falling to  $36\mu\text{g}/\text{m}^3$ . The previous years result had been based on only three months data whereas the 2004 average is based upon a full year's data and considered to be a more accurate reflection of the air quality at the site.

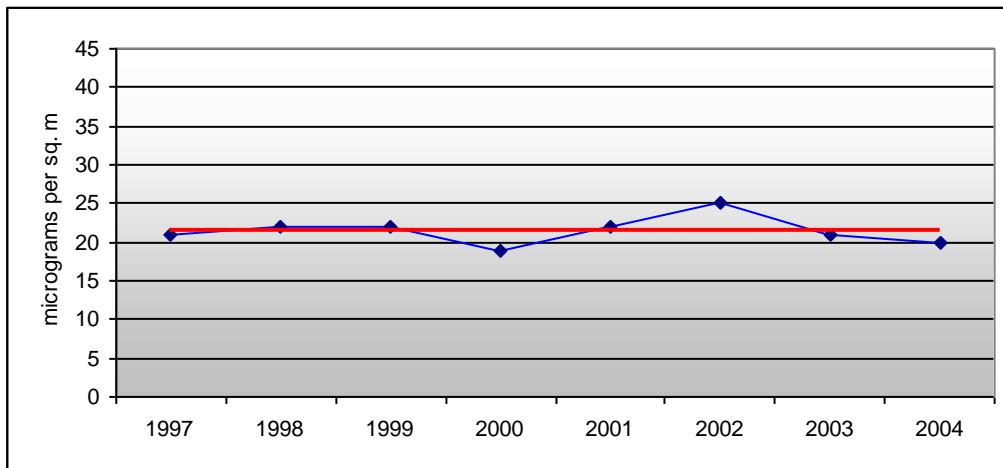
- 2.2.3 An alternative way to consider the data is to look at the overall improvement in the local air quality throughout the monitoring period; i.e. to consider the annual trends in nitrogen dioxide concentrations.
- 2.2.4 In many cases monitoring data dates back to 1994 which allows for a robust study of the trends. Plotted below are selections of graphs, which show how levels of nitrogen dioxide have varied with time. Each graph includes a linear plot to show the trend in the data. Sites have been selected to represent the different types of monitoring sites across the Kennet district.
- 2.2.6 Graph 1 represents the annual trend at the roadside site at Devizes Police Station. The site is adjacent to New Park Street, a busy through road in the town and results date back to 1994. The trend in annual mean concentrations is down over this period (represented by the solid line). The decline is considered to be as a consequence of the improvement in engine technology over the monitoring period.

Graph 1 – Annual trend, Devizes Police Station (roadside)



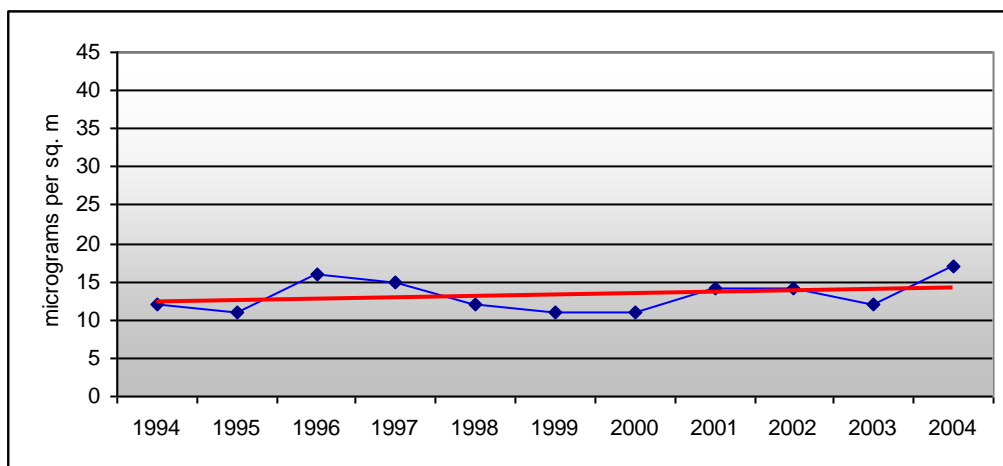
- 2.2.7 Graph 2 plots the annual trend in the busy Devizes Market Place. The site is an urban centre site and although the general trend is very slightly upwards, the annual mean concentrations are low at just over  $20\mu\text{g}/\text{m}^3$  and are not of immediate concern. However, the slight upward trend was bucked by the 2003 and 2004 results, which fell from  $25\mu\text{g}/\text{m}^3$  to  $20\mu\text{g}/\text{m}^3$ . Modifications were made to the parking layout in the Market Place over this period, which may partly account for the fall.

Graph 2 – Annual trend, Devizes Market Place (urban centre)



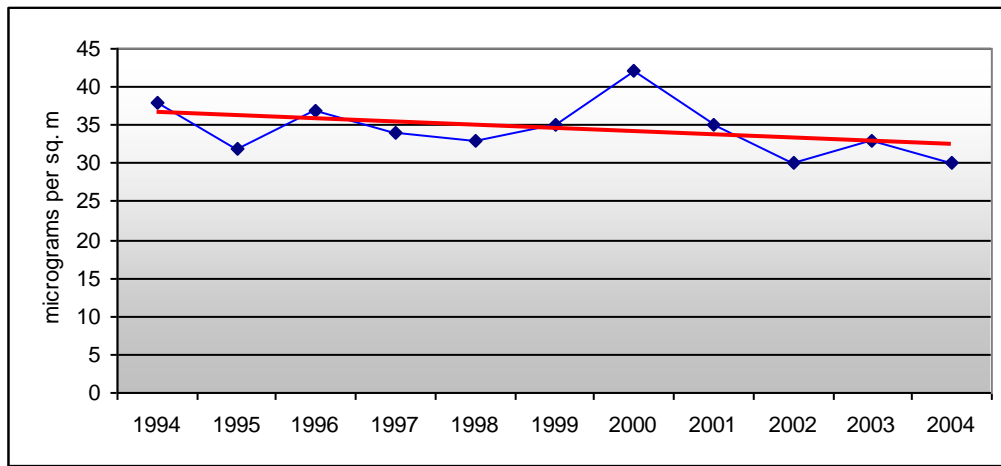
2.2.8 Graph 3 shows the situation at an urban background site in Devizes, the tube being located at Wansdyke Primary School. Annual mean levels at the site have remained low since monitoring was first started in 1994.

Graph 3 – Annual trend, Wansdyke Primary School (urban background)



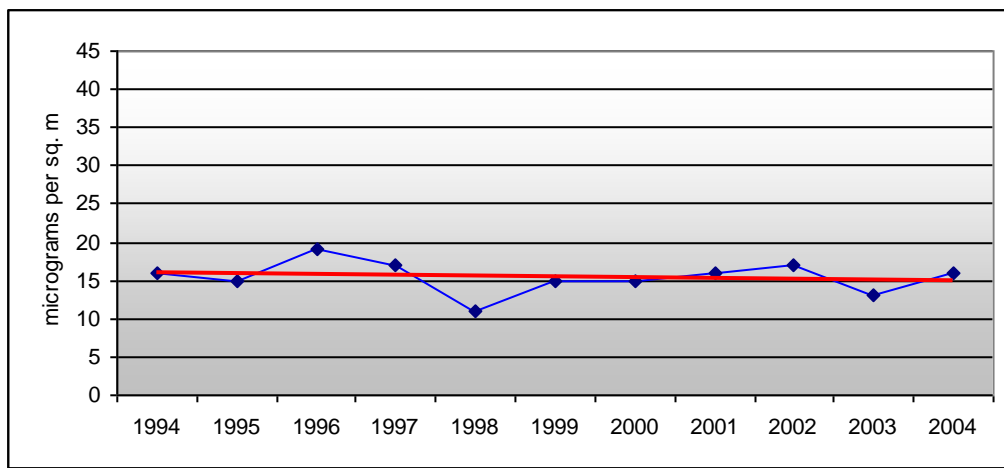
2.2.9 The town of Marlborough is served by a total of 4 nitrogen dioxide monitoring sites, although only the roadside site at St Peters Church has been operating consistently since monitoring began in 1994. The site is adjacent to both carriageways of the busy A4 through road and the trend in annual mean concentrations is demonstrated in Graph 4. The graph shows a slight downward trend in annual mean concentrations.

Graph 4 – Annual trend, St Peters Church, Marlborough (roadside site)



2.2.10 Elsewhere in the Kennet district, a number of the monitoring sites located at village locations have been employed. Several sites have been in use since 1994 and the trend at the Pewsey Church site is set out in Graph 5. The site is centrally located, away from the main road bisecting the village. The graph again shows a downward trend in nitrogen dioxide concentrations (solid line).

Graph 5 – Annual trend, Pewsey Church (urban centre site)



## 2.3 Nitrogen dioxide monitoring – conclusions

2.3.1 It is once again clear that the conclusions made in previous air quality reporting for the Kennet district council still hold true in that the air quality objectives for nitrogen dioxide will be met. The 2004 submission identified a potential failure, albeit one with only minimal monitoring at the time of reporting. A full years monitoring at the Shanes Castle site has shown that while there is a raised level of nitrogen dioxide at the site, it is still below a level at which the air quality standard is at risk of being exceeded.

- 2.3.2 The general trend for annual mean levels of nitrogen dioxide levels across the Kennet district is a downward one. Graphs have been presented for 5 of the 20 monitoring sites and the graphed locations were selected to show the worst case situation for the main towns within Kennet.
- 2.3.3 An upward trend was noted at the Wansdyke School site and also when the main dataset is considered (Table 2.1) the results for Marlborough High Street are showing a slight upward trend, although the levels recorded does not put the site at risk of exceeding the air quality standards. This site will be considered in more detail in the 2006 Updating and Screening Assessment as it is a busy shopping area.

## **CHAPTER 3: Other pollution monitoring**

### **3.1 Additional monitoring**

- 3.1.1 As already discussed in this progress report, Kennet District Council has instigated a programme of monitoring to assess the impact of an industrial process located in neighbouring West Wiltshire District Council.
- 3.1.2 A total of 9 new monitoring sites have been established across the south west of the district. Each site is using diffusion tubes to measure levels of nitrogen dioxide, sulphur dioxide and trace organic pollutants (benzene, toluene and xylene). The tubes have been in place since December 2003.
- 3.1.3 The Lafarge Cement in Westbury located approximately 6 km from the south-western border of the Kennet district has applied to the Environment Agency to vary the IPPC permit they hold. Ultimately, the aim is for them to be permitted to trial the substitution of up to 40% of their fuel load with recycled waste solvents.
- 3.1.4 There has been significant delay in the start of the trial to burn the substitute fuel. Originally envisaged for a start in early 2004, it was until recently expected that the trials would commence in early 2006.
- 3.1.5 However, it has just been announced that the trial has been delayed for a period of two years. Nevertheless, the monitoring that has been established by Kennet District Council will be continued until the trials are completed as it serves as a useful 'benchmarking' exercise against which the impact of the process variation can be measured.
- 3.1.6 A full list of the extra sites employed in the new survey is set out below, including the definition of the type of monitoring sites specified, again taken from Appendix A to the Technical Guidance document LAQM.TG(03) and summarised previously in 2.1.5. Note that for some species, sites already used in the nitrogen dioxide survey were employed. This included the Pewsey site which, being located well away from the Lafarge site, is used as a control site.
- Devizes Avon Road – An Urban background site located at the end of a domestic garden but with a clear line of sight to the Lafarge Cement works stack some 13 km distant to the South-West.
  - Devizes Castle – An Urban Centre site situated at the gatehouse to Devizes castle.
  - Easterton – Suburban tube located in this small village 13.5 km to the East North-East of the Lafarge site.
  - Urchfont – Suburban tube located in this small village 15 km to the North-East of the Lafarge site.

- Worton – Rural site with the tube located at an isolated house on the fringe of a small village located 9 km to the North-East of the Cement works.
- All Cannings – Suburban site in this small village located 20km to the North-East of the Cement works.

### 3.2 Results and discussion of results

- 3.2.1 As previously discussed, the purpose of this monitoring regime is to assess the impact of the proposed trial of burning recycled waste solvent as a fuel in the cement works upon the air quality in the most exposed (due to prevailing wind direction and proximity to the stack) areas of the Kennet district.
- 3.2.2 As the trial has yet to commence, the results currently only lend themselves to basic comment on background pollution levels.

### 3.3 Nitrogen dioxide monitoring

- 3.3.1 Table 3.3 summarises the monitoring carried out for levels of nitrogen dioxide. Quarterly averages have been used for each of the 6 sites.
- 3.3.2 Recorded levels of nitrogen dioxide at the 6 new sites are very low and well below any of the published guidance levels. This was not unexpected as the sites were selected to reflect the impact of the fuel trial upon ambient levels of pollutants rather than with a specific problem in mind.
- 3.3.3 Given the low levels of the pollutant detected, it was not considered necessary to correct or extrapolate the data as with the main nitrogen dioxide survey results.
- 3.3.4 Nitrogen dioxide levels were measured by diffusion tubes which are analysed by Graco Laboratories using a UV Spectrophotometry method with a 20% TEA/Water. They report a 5.08% +/- uncertainty

**Table 3.3 Nitrogen dioxide monitoring**

Site	2004 Q1	2004 Q2	2004 Q3	2004 Q4	2005 Q1
Devizes – Avon Road	13.9	8.4	9.6	16.8	17
Devizes – Castle	15.7	9.5	7.7	14.5	16
Easterton	14.8	9.2	6.9	13	13.3
Urchfont	17.2	14.5	11.1	18.7	17.2
Worton	14.7	10.4	8.2	14.2	14.7
All Cannings	14.1	6.6	8.2	17.1	12.4

\*all results given in  $\mu\text{g}/\text{m}^3$

### 3.4 Sulphur dioxide monitoring

- 3.4.1 Table 3.4 below summarises the monitoring carried out for levels of sulphur dioxide. Again quarterly averages have been used to simplify the data for the purposes of this progress report.
- 3.4.2 Again the recorded levels of sulphur dioxide are very low and well below the most relevant Air Quality Objective for a 24-hour mean of 125  $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 3 times a year.
- 3.4.3 Sulphur dioxide levels are measured by diffusion tubes and analysed by Graco using an Ion Chromatography method with a reported 6.93% +/- uncertainty.

**Table 3.4 – Sulphur dioxide monitoring**

Site	2004 Q1	2004 Q2	2004 Q3	2004 Q4	2005 Q1
Devizes – Avon Road	2.2	2.6	2.2	1.7	1.8
Devizes – Castle	4.2	2.8	2.5	2.7	2.3
Easterton	3.8	4.1	2.8	2.1	2.8
Erlestoke	3.6	3.8	1.8	2.2	2.2
Potterne	11.8	3.4	2.4	2.3	3.6
Pewsey	4.3	3.1	2.8	3.1	3.2

\*all results given in  $\mu\text{g}/\text{m}^3$

### 3.5 VOC monitoring

- 3.5.1 Levels of benzene, toluene and xylene species were monitored by diffusion tube at 6 sites, the results summarised below in table 3.5. An overall annual average for each of the species is given. These species were chosen as they are potentially raw materials for the fuel to be used in the proposed trial.
- 3.5.2 Of the three species of VOC reported, only benzene has an Air Quality Objective of an annual mean of 5 $\mu\text{g}/\text{m}^3$  by the end of 2010. The maximum annual mean detected was 1.46 $\mu\text{g}/\text{m}^3$  at the Pewsey site (Urban Centre), well below the limit even before any correction for the year is applied.
- 3.5.3 All VOC species were analysed by Graco Laboratories using a thermal desorption / Gas Chromatography method reporting a 16.52% +/- uncertainty.

**Table 3.5 – VOC monitoring**

Site	2004 benzene	2004 toluene	2004 ethyl-benzene	2004 mp-xylene	2004 o-xylene
Devizes – Avon Road	1	0.4	0.1	0.2	0.1
Devizes – Castle	0.9	0.5	0.1	0.3	0.1
Easterton	1	0.5	0.2	0.3	0.1
Erlestoke	1	0.5	0.1	0.2	0.1
Potterne	1.3	0.9	0.1	0.4	0.2
Pewsey	1.5	1	0.7	0.9	0.3

\*all results given in ppb apart from Benzene given in  $\mu\text{g}/\text{m}^3$

### **3.6 Additional monitoring – conclusions**

- 3.6.1 Essentially, the extra survey discussed in this chapter of the progress report serves only to show the good background air quality in the South-West of the Kennet district. The survey will become more relevant as a benchmarking tool when and if the trial for the combustion of the RLF begins at the Westbury Cement works and the impact of the trials can be assessed.

## **CHAPTER 4:                   New local developments**

### **4.1     Industrial sources**

- 4.1.1 No significant local industrial sources of pollutants were identified during the first round of the review and assessment process within the Kennet district. This situation was confirmed in the Update and Screening Assessment for the Kennet district completed in 2003 and remains unchanged to date.
- 4.1.2 No new Part A installations have been established within the Kennet district since the previous air quality reporting stage.
- 4.1.3 One Part B installation is in the process of being permitted at the time of reporting. The process, a Concrete Batching Plant, is located on an industrial estate to the east of Devizes and is not expected to impact significantly upon air quality. However, basic emission monitoring for particulates is to be incorporated into the permit for the installation and should problems be reported then the impact of the process can be reassessed at the next stage of air quality reporting in April 2006.

### **4.2 Planned developments**

- 4.2.1 Liaison with development control officers at Kennet District Council has not realised any significant plans for development likely to significantly impact upon air quality.
- 4.2.2 A large redevelopment of an army barracks in the garrison town of Tidworth is planned to commence in the summer of 2005, with final completion scheduled for 2014. The development is entirely within MOD land and although large in scale, is not expected to significantly increase traffic flows. Some local increase of traffic levels is expected during the development as outside contractors access the site and local monitoring of nitrogen dioxide levels will be implemented by the developers to ensure that any impact upon local air quality is realised.
- 4.2.3 Of more relevance is a draft plan by County Council transport planners to redirect traffic in Devizes town centre. Although the plan is still years from fruition, indeed has still to pass the first stage of planning, Kennet District Council have relocated a number of nitrogen dioxide monitoring sites to begin the process of assessing levels of pollution prior to any changes taking place.
- 4.2.4 Future air quality assessments and progress reports will consider the implications of any changes to the traffic flow through the town, should they eventually occur.
- 4.2.5 No new landfill sites or quarries have been granted permission in the Kennet district since the last air quality reporting stage.

## **CHAPTER 5: Conclusions to the 2004 progress report**

### **5.1 Conclusions to the report**

- 5.1.1 This progress report has concluded that there have been no significant changes within the Kennet district likely to impact upon air quality.
- 5.1.2 The report has summarised the extensive nitrogen dioxide monitoring carried out and has not identified any sites which are at risk of exceeding the air quality objectives.
- 5.1.3 Monitoring to assess the impact of a proposed change to an industrial process located in a neighbouring authority will continue despite the fact that the change has been delayed by two years and results will be discussed at the next stage of formal air quality reporting.

**Appendix 1 – Location of Pollution Monitoring Sites.**