

# Wychavon District Council



## 2009 Air Quality Updating and Screening Assessment for *Wychavon District Council*

In fulfillment of Part IV of the Environment Act 1995  
Local Air Quality Management

Date April 2009

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## **Executive Summary**

This Updating and Screening Assessment has demonstrated that there were no developments that would change conclusions of previous reviews and assessments that the objectives for Benzene, 1-3 Butadiene, Carbon Monoxide, Lead, Sulphur Dioxide and Particulates (PM<sub>10</sub>) are unlikely to be exceeded.

In most of Wychavon District Council the objectives for Nitrogen Dioxide are unlikely to be exceeded, however in addition to the previously declared AQMA in Port Street Evesham concern remains in respect of the two hot spots that have previously been identified. These are

1. The section of the A44 between junction 7 of the M5 and the A4440 at Whittington, where it will be necessary for a detailed assessment to be carried out as there may be an exceedence of the annual mean at the building facade of at least one property.
2. Junction 5 of the M5 and the A38 at Wychbold. It is considered that the annual mean is not currently being exceeded at the facades of the nearest residential properties. However the recent installation of traffic lights to the junction of the A38 and northern slip road appears to be increasing the queuing traffic on the A38 in front of the residential properties. It is proposed to seek the co-operation of residents to locate diffusion tubes on building façade of the nearest properties.

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# 1 Introduction

## 1.1 Description of Local Authority Area

Wychavon District Council is the largest District Council in Worcestershire on the river plain of the Avon between the Cotswold Hills to the south and Birmingham plateau to the north. The District covers 260 square miles populated by 116900 people living in the towns of Droitwich, Evesham, Pershore and nearly 100 villages and hamlets. The district is relatively flat having isolated hills most notably Bredon Hill, 6km south of Pershore.

Wychavon has boundaries with Worcester City, Redditch Borough, Tewkesbury, Wyre Forest, Bromsgrove, Stratford on Avon, Cotswold and Malvern Hills District Councils.

## 1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

## 1.3 Air Quality Objectives

The air quality objectives applicable to LAQM in **England** are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre  $\mu\text{g}/\text{m}^3$  (milligrammes per cubic metre,  $\text{mg}/\text{m}^3$  for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

**Table 1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.**

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
<b>Benzene</b>	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
<b>1,3-Butadiene</b>	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
<b>Carbon monoxide</b>	10.0 $\text{mg}/\text{m}^3$	Running 8-hour mean	31.12.2003
<b>Lead</b>	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
<b>Nitrogen dioxide</b>	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
<b>Particles (PM<sub>10</sub>) (gravimetric)</b>	50 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
<b>Sulphur dioxide</b>	350 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

## **1.4 Summary of Previous Review and Assessments**

Wychavon District Council's first round of review and assessment was published in December 2000 and concluded that it was unlikely there would be any exceedences of any of the objectives.

In February 2003 the Updating and Screening Assessment (USA) for identifying those aspects that have changed since the first round of reviews and assessment concluded was that the objectives were unlikely to be exceeded, therefore there was no need to proceed to a detailed assessment.

The Updating and Screening Assessment (USA) completed in April 2006, concluded was that it was necessary to proceed to a Detailed Assessment of nitrogen dioxide (NO<sub>2</sub>) in the following locations:

- Swan Lane, Evesham
- Port Street, Evesham

and for particulate matter (PM<sub>10</sub>) at:

- Walton Lane, Hartlebury

The conclusions of the Detailed Assessment were:

- The annual mean objective for the nitrogen dioxide concentration not to exceed 40 µg/m<sup>3</sup> by the 31 December 2005 is not currently exceeded in Swan Lane, but any future changes in road layout and traffic flows in the area will need to be assessed against the effect on air quality. Nitrogen dioxide monitoring will continue.
- the annual mean objective for the nitrogen dioxide concentration not to exceed 40 µg/m<sup>3</sup> by the 31 December 2005 is exceeded in part of Port Street Evesham.
- The 24 hourly mean of PM<sub>10</sub> must not exceed 50 ug/m<sup>3</sup> more than 35 times per year to be achieved by 31<sup>st</sup> December 2004 is not currently being exceeded in Hartlebury.
- The annual mean of PM<sub>10</sub> must not exceed 40 ug/m<sup>3</sup> to be achieved by 31<sup>st</sup> December 2004 is not currently being exceeded in Hartlebury.

As a result of the above conclusions and in accordance with the Council's statutory obligations under Local Air Quality Management (LAQM) an Air Quality Management Area was declared in Port Street Evesham (figure 1).

A stage 4 further assessment has been carried out and an Action Plan is being prepared.

No developments were identified by the Progress Report 2007 that would change previous conclusions that the objectives for Benzene, 1-3 Butadiene, Carbon Monoxide, Lead, Particulates (PM<sub>10</sub>) and Sulphur Dioxide are unlikely to be exceeded.

The hot spots in Whittington and Wychbold continue to be reviewed because of their relationship to road transport.

These reports can be viewed on [www.wychavon.gov.uk](http://www.wychavon.gov.uk)

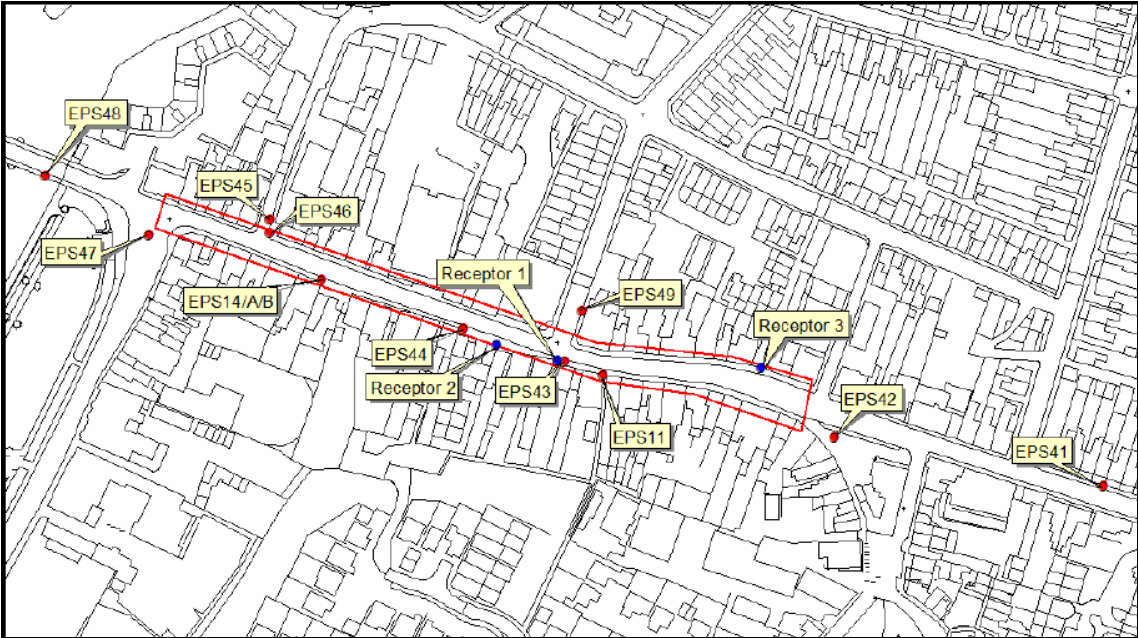


Figure 1: Port Street AQMA (red line). Red Dots Show Diffusion Tube Monitoring Locations, whilst Blue Dots Show Worst-Case Receptor Locations. © Crown Copyright. Wychavon District Council.

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## 2 New Monitoring Data

### 2.1 Summary of Monitoring Undertaken

#### 2.1.1 Automatic Monitoring Sites

No automatic monitoring is carried out in Wychavon District Council.

#### 2.1.2 Non-Automatic Monitoring

The location of the diffusion tubes EPS1 to 29 is as in previous reviews and assessments. The maps in Appendix B Figure 1 and 2 show the sites in Evesham, figures 3 and 4 show the sites in Whittington and Wychbold that are identified as hot spots, figure 5 shows the sites EPS50 and EPS51 which are new sites in the area of the new centre for sorting co-mingled re-cyclables.

Monitoring of nitrogen dioxide using diffusion tubes is carried at the sites set out in table 2.1

**Table 2.1 Details of Non- Automatic Monitoring Sites**

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA ?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location?
Church Lane Norton	kerbside	387433 251583	NO <sub>2</sub>	N	Y (10m) 69m M5	0.5m	Y
Nr Swan Whittington	roadside	387602 252494	NO <sub>2</sub>	N	Y (11m)	2.0m	Y
Nr Swan Whittington	roadside	387602 252494	NO <sub>2</sub>	N	Y (11m)	2.0m	Y
Nr Swan Whittington	roadside	387602 252494	NO <sub>2</sub>	N	Y (11m)	2.0m	Y
Homeleigh Swinesherd	On receptor	388373 253964	NO <sub>2</sub>	N	Y (0m)	62m	Y
Civic Centre Pershore	Urban background	394703 246308	NO <sub>2</sub>	N	N	2m	N
High Str Pershore	roadside	394850 246065	NO <sub>2</sub>	N	N	2m	Y
40 High Str Pershore	roadside	395048 245527	NO <sub>2</sub>	N	Y (2m)	0.5m	Y
St Andrews Rd Pershore	Urban background	394571 245377	NO <sub>2</sub>	N	Y(m)	1.5m	N
Broad Str Pershore	roadside	394981 245735	NO <sub>2</sub>	N	N	3m	Y
Ombersley Str Droitwich	roadside	389739 263219	NO <sub>2</sub>	N	N	2m	Y
St Andrews Str Droitwich	roadside	389970 263149	NO <sub>2</sub>	N	N	2m	Y
Hanbury Road Droitwich	kerbside	390854 263188	NO <sub>2</sub>	N	Y (7m) 40m M5	0.5m	Y

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Mayflower Rd Droitwich	roadside	390715 262846	NO <sub>2</sub>	N	Y (14m) 36m M5	1m	Y
Mayflower Rd Droitwich	roadside	390715 262846	NO <sub>2</sub>	N	Y (14m) 36m M5	1m	Y
Mayflower Rd Droitwich	roadside	390715 262846	NO <sub>2</sub>	N	Y (14m) 36m M5	1m	Y
Tagwell Cl Droitwich	roadside	390853 261909	NO <sub>2</sub>	N	Y (15m) 36m M5	1m	Y
Tagwell Cl Droitwich	roadside	390853 261909	NO <sub>2</sub>	N	Y (15m) 37m M5	1m	Y
Tagwell Cl Droitwich	roadside	390853 261909	NO <sub>2</sub>	N	Y (15m) 37m M5	1m	Y
Westlands Droitwich	roadside	389125 264101	NO <sub>2</sub>	N	N	2m	Y
A38 Worcester Rd Wychbold	roadside	391940 265605	NO <sub>2</sub>	N	N	2.5m	Y
Worcester Rd Wychbold	roadside	392031 265624	NO <sub>2</sub>	N	Y (15.5m) 140m M5	2.5m	Y
Worcester Rd Wychbold	roadside	392031 265624	NO <sub>2</sub>	N	Y (15.5m) 140m M5	2.5m	Y
Worcester Rd Wychbold	roadside	392031 265624	NO <sub>2</sub>	N	Y (15.5m) 140m M5	2.5m	Y
Merryfields House Norton	On receptor	388924 251173	NO <sub>2</sub>	N	Y (0M)	76m	Y
Sangia Norton	On receptor	389171 251380	NO <sub>2</sub>	N	Y (0m)	13m	Y
Swan Lane Evesham	kerbside	403796 244013	NO <sub>2</sub>	N	N (1m)	0.2m	Y
Swan Lane Evesham	kerbside	403796 244013	NO <sub>2</sub>	N	N (1m)	0.3m	Y
Swan Lane Evesham	kerbside	403796 244013	NO <sub>2</sub>	N	N (1m)	0.3m	Y
High Street Evesham	kerbside	403761 244002	NO <sub>2</sub>	N	N	1.0m	Y
High Street Evesham	kerbside	403747 243925	NO <sub>2</sub>	N	N	1.5m	Y
Avon Street Evesham	kerbside	403725 244023	NO <sub>2</sub>	N	Y (1M)	0.5m	Y
High Street Evesham	roadside	403753 244068	NO <sub>2</sub>	N	Y (2m)	1m	Y
High Street Evesham	roadside	403751 244020	NO <sub>2</sub>	N	N	2m	Y
Swan Lane Evesham	roadside	403822 244001	NO <sub>2</sub>	N	N	1.5m	Y
Swan Lane Evesham	roadside	403858 244001	NO <sub>2</sub>	N	N	1.5m	Y
Cowl St Evesham	roadside	403892 243996	NO <sub>2</sub>	N	N (3m)	1.5m	Y
Swan Lane Evesham	roadside	403032 243980	NO <sub>2</sub>	N	N (4m)	1.5m	Y
Chapel Str Evesham	roadside	403923 243894	NO <sub>2</sub>	N	N	1.5m	Y
Mill Str Evesham	roadside	403976 243811	NO <sub>2</sub>	N	Y (3.0m)	2.0m	Y
Port Str Evesham	roadside	404237 243593	NO <sub>2</sub>	Y	Y(0m)	1.5m	Y

Port Str Evesham	kerbside	404128 243630	NO2	N	N(1.7M)	0.3m	Y
Port Str Evesham	kerbside	404128 243630	NO2	Y	N(1.7M)	0.3m	Y
Port Str Evesham	kerbside	404128 243630	NO2	Y	N(1.7M)	0.3m	Y
Port Str Evesham	roadside	404431 243550	NO2	Y	Y(2.7m)	1.5m	Y
Port Str Evesham	roadside	404327 243569	NO2	y	Y(3m)	2.0m	Y
Port Str Evesham	roadside	404222 243598	NO2	Y	Y(0m)	1.5m	Y
Port Str Evesham	roadside	404183 243611	NO2	Y	Y(2.6m)	1.5m	Y
Castle Str Evesham	roadside	404108 243648	NO2	N	Y(6.5m)	1.5m	Y
Castle Str Evesham	roadside	404061 243647	NO2	N	Y(3m)	1.5m	Y
Waterside Evesham	roadside	404021 243670	NO2	N	Y(11m)	0.5m	Y
Bridge Street Evesham	roadside	404229 243670	NO2	N	N	1.5m	Y
Burford Rd Evesham	roadside	404232 243621	NO2	N	Y(0m)	1.5m	Y

The diffusion tubes are supplied and analysed by Gradko International Ltd using 20% TEA/water. The bias factor from the 11 studies in 2008 on national spreadsheet is 0.92. The laboratory's precision result for this method was good for 2008. The WASP assessment outcome using the RPI Old and New Criteria for rounds 98 – 102 was good.

## **2.2 Comparison of Monitoring Results with AQ Objectives**

### **2.2.1 Nitrogen Dioxide**

#### **Automatic Monitoring Data**

Wychavon does not carry out any automatic monitoring.

#### **Diffusion Tube Monitoring Data**

The diffusion tubes are supplied and analysed by Gradko International Ltd using 20% TEA/water. The bias factor from the 11 studies in 2008 on national spreadsheet is 0.92. The laboratory's precision result for this method was good for 2008. (see Appendix A)

**Table 2.3 Results of Nitrogen Dioxide Diffusion Tubes**

Site ID	Location	Within AQMA?	Proportion of year with valid data 2008 %	Annual mean concentrations Adjusted for bias ( $\mu\text{g}/\text{m}^3$ )		
				2006 *	2007 *	2008
EPS1	Church Lane Norton	N	63		33.23	31.69
<b>EPS2*</b>	<b>Nr Swan Whittington</b>	<b>N</b>			<b>51.45</b>	<b>52.23</b>
<b>EPS3*</b>	<b>Nr Swan Whittington</b>	<b>N</b>			<b>52.44</b>	<b>55.70</b>
<b>EPS4*</b>	<b>Nr Swan Whittington</b>	<b>N</b>			<b>53.73</b>	<b>54.72</b>
EPS5	Homeleigh Swinesherd	N	83		32.92	30.54
EPS6	Civic Centre Pershore	N			21.83	22.48
EPS7	High Street Pershore	N			27.91	28.52
EPS8	40 high Street Pershore	N	83		32.79	31.36
EPS9	St Andrews Road Pershore	N			17.22	16.91
EPS10	Broad Street Pershore	N			26.89	30.34
EPS16	Ombersley Street Droitwich	N			31.02	31.13
EPS17	St Andrews Road Droitwich	N	75		25.64	30.45
EPS18	Hanbury Road Droitwich	N	83		29.41	30.11
EPS19	Mayflower Road Droitwich	N			33.39	40.24
EPS20	Mayflower Road Droitwich	N			33.38	39.43
EPS21	Mayflower Road Droitwich	N			34.06	37.15
EPS22	Tagwell Close Droitwich	N			30.07	31.51
EPS23	Tagwell Close Droitwich	N			32.27	33.12
EPS24	Tagwell Close Droitwich	N	92		30.18	33.85
<b>EPS25</b>	<b>Westlands Droitwich</b>	<b>N</b>	<b>83</b>		<b>43.81</b>	<b>48.58</b>
EPS26	A38 Wychbold	N			58.10	55.51
<b>EPS27**</b>	<b>Worcester Road Wychbold</b>	<b>N</b>			<b>51.68</b>	<b>56.22</b>
<b>EPS28**</b>	<b>Worcester Road Wychbold</b>	<b>N</b>			<b>50.82</b>	<b>51.57</b>
<b>EPS29**</b>	<b>Worcester Road Wychbold</b>	<b>N</b>			<b>51.54</b>	<b>49.74</b>
EPS50	Merryfields Norton	N				19.20
EPS51	Sangra Norton	N	92			21.84

\* Average of triple diffusion tubes 2007  $52.54\mu\text{g}/\text{m}^3$  2008  $54.20\mu\text{g}/\text{m}^3$

\*\* Average of triple diffusion tubes 2007  $51.35\mu\text{g}/\text{m}^3$  2008  $54.46\mu\text{g}/\text{m}^3$

Site ID	Location	Within AQMA?	Proportion of year with valid data 2008 %	Annual mean concentrations ( $\mu\text{g}/\text{m}^3$ )		
				2006 *	2007 *	2008
EPS13***	Swan Lane Evesham	N		39.39	39.20	33.22
EPS13a***	Swan Lane Evesham	N		39.72	40.33	37.51
EPS13b***	Swan Lane Evesham	N		39.77	39.10	30.53
EPS15	High Street Evesham	N		43.31	37.99	26.92
EPS31	High Street Evesham	N		37.52	37.96	23.67
EPS32	Avon Street Evesham	N		30.64	30.93	24.88
EPS33	High Street Evesham	N		36.33	33.44	22.67
EPS34	High Street Evesham	N	92	34.89	34.77	37.51
EPS35	Swan Lane Evesham	N		30.96	30.55	30.53
EPS36	Swan Lane Evesham	N		24.75	28.02	26.92
EPS37	Cowl Street Evesham	N	92	23.65	23.80	23.67
EPS38	Swan Lane Evesham	N		26.03	27.91	24.88
EPS39	Chapel Street Evesham	N	92	24.87	22.80	22.67
EPS40	Mill Street Evesham	N		26.87	25.40	26.93

The results for 2006 are from 6 months monitoring June to December

\*\*\* Average of triple diffusion tubes 2007  $39.54\mu\text{g}/\text{m}^3$  2008  $33.77\mu\text{g}/\text{m}^3$

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Site ID	Location	Within AQMA ?	Proportion of year with valid data 2008 %	Annual mean concentrations ( $\mu\text{g}/\text{m}^3$ )		
				2006 *	2007 *	2008
EPS11	Port Street Evesham	Y	75		36.98	38.11
<b>EPS14a****</b>	<b>Port Street Evesham</b>	<b>Y</b>	<b>92</b>	<b>42.94</b>	<b>39.45</b>	<b>41.14</b>
<b>EPS14b****</b>	<b>Port Street Evesham</b>	<b>Y</b>		<b>43.73</b>	<b>41.24</b>	<b>42.14</b>
<b>EPS14c****</b>	<b>Port Street Evesham</b>	<b>Y</b>	<b>92</b>	<b>46.31</b>	<b>37.89</b>	<b>42.07</b>
EPS41	Port Street Evesham	Y	83	31.77	34.68	36.05
EPS42	Port Street Evesham	N	75	32.66	30.68	38.15
EPS43	Port Street Evesham	Y		39.96	34.50	36.75
EPS44	Port Street Evesham	Y	92	39.96	36.80	36.69
EPS45	Castle Street Evesham	N	92	26.92	27.74	27.27
EPS46	Castle Street Evesham	N		29.10	28.48	28.59
EPS47	Waterside Evesham	N	92	35.89	31.43	30.00
EPS48	Bridge Street Evesham	N		25.17	24.86	23.60
EPS49	Burford Road Evesham	N	92	29.22	29.88	21.75

The results for 2006 are from 6 months monitoring June to December

\*\*\*\* Average of triple diffusion tubes 2007  $39.53\mu\text{g}/\text{m}^3$

\*\*\*\* Average of triple diffusion tubes 2008  $41.78\mu\text{g}/\text{m}^3$

The bias factors applied to the results in 2007 of 0.89 and 2008 of 0.92 are derived from the national studies.

None of the annual means exceed  $60\mu\text{g}/\text{m}^3$  therefore it is considered that the 1-hour mean concentrations for nitrogen dioxide will not exceed  $200\mu\text{g}/\text{m}^3$  objective.

The results of the nitrogen dioxide diffusion tube monitoring during 2008 show that the annual objective is being exceeded at the triple roadside sites EPS2, EPS3, EPS4 nr Swan Whittington, EPS 27, EPS28, EPS29 Worcester Road Wychbold and at the kerbside triple site EPS14, EPS14a, EPS14b Port Street Evesham. (at the start of 2008 these tubes had to be resited and are now a kerbside location rather than roadside)

The results for the sites above have been adjusted for distance from the monitoring site to the façade of the nearest residential property using the new calculator on the review and assessment help desk and the outcomes are set out below.

Reference	Background $\text{NO}_2$ $\mu\text{g}/\text{m}^3$	/Kerbside Result $\mu\text{g}/\text{m}^3$	Distance from Kerbside	Distance to building façade m	Façade Result $\mu\text{g}/\text{m}^3$
EPS2, EPS3, EPS4	24.4	54.21	2	11	42.30
EPS14, 14a, 14b	14.13	41.78	0.3	1.7	34.60
EPS27, EPS28, EPS29	24.56	52.51	2.5	15.5	37.10

The conclusions are that:

There is an exceedence of the annual mean at EPS2, EPS3 and EPS4 at Whittington and therefore a detailed assessment is required.

## **Wychavon District Council**

Site EPS14, EPS14a and EPS14b Port Street Evesham is within the declared AQMA and previously it has had results above the objective, however the current level appears to be below the objective. This site has in the past shown the highest nitrogen dioxide levels within the AQMA therefore whilst work will continue on the preparation of the action plan if results continue to be below the objective consideration will be given to un-declaring the AQMA.

The result from EPS27, EPS28 and EPS29 Wychbold is below the objective, but monitoring will continue and attempts will be made to locate tubes on the building façade of the nearest receptor rather than at the roadside site. The Highways Agency recently installed traffic lights on the northern slip road from the M5 and this is increasing the queuing traffic on the A38 in front of residential properties.

Site EPS43 is the nearest tube to receptor 1 identified in the further assessment prepared for use in compiling the AQMA action plan (see Appendix B Figure 1). The concentration of  $36.75 \mu\text{g}/\text{m}^3$  is higher than the  $34.50 \mu\text{g}/\text{m}^3$  in 2007. When modelled as a worst case for the stage 4 assessment, the level was  $41.5 \mu\text{g}/\text{m}^3$  but is predicted to fall to  $38.5 \mu\text{g}/\text{m}^3$  in 2010 without any additional action plan measures. We will continue to monitor and also develop the action plan.

### **2.2.2 PM<sub>10</sub>**

Wychavon District Council does not carry out automatic monitoring for PM<sub>10</sub>.

### **2.2.3 Sulphur Dioxide**

Wychavon District Council does not monitor sulphur dioxide.

### **2.2.4 Benzene**

Wychavon District Council does not monitor benzene.

### **2.2.5 Other pollutants monitored**

Wychavon District Council does not monitor for any other pollutants.

## **3 Road Traffic Sources**

### **3.1 Narrow Congested Streets with Residential Properties Close to the Kerb**

Previous assessments identified that Port Street Evesham is a narrow congested street with residential properties close to the kerb and in which there was exceedence of the annual mean objective. An Air Quality Management Area was declared in 2007.

Wychavon District Council confirms that there are no newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

### **3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic**

All busy streets have been considered in previous rounds of assessment. The results of the diffusion tube monitoring in 2008 show no sites with annual mean concentrations equal to or greater than  $60\mu\text{g}/\text{m}^3$ .

Wychavon District Council confirms that there are no newly identified busy streets where people may spend 1 hour or more close to traffic.

### **3.3 Roads with a High Flow of Buses and/or HGVs.**

Previous reviews and assessments have not identified any roads with high flow of buses and or HGV's and no new sites have been identified.

Wychavon District Council confirms that there are no newly identified roads with high flows of buses/HGVs.

### **3.4 Junctions**

No new busy junctions have been identified in this round of review and assessment.

Wychavon District Council confirms that there are no newly identified busy junctions/busy roads.

### **3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment**

Wychavon District Council confirms that there are no new or proposed roads.

### **3.6 Roads with Significantly Changed Traffic Flow**

Wychavon District Council confirms that there are no newly identified roads with significantly changed traffic flows.

### **3.7 Bus and Coach Stations**

Wychavon District Council confirms that there are no relevant bus stations in the Local Authority area.

## **4 Other Transport Sources**

### **4.1 Airports**

Wychavon District Council confirms that there are no airports in the Local Authority area.

### **4.2 Railways (Diesel and Steam Trains)**

#### **4.2.1 Stationary Trains**

Wychavon District Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

#### **4.2.2 Moving Trains**

Wychavon District Council is not an authority that is listed on the Review and Assessment Help Desk as an authority with railway lines with high usage where the background annual mean NO<sub>2</sub> concentration above 25µg/m<sup>3</sup>

Wychavon District Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

### **4.3 Ports (Shipping)**

Wychavon District Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

## 5 Industrial Sources

### 5.1 Industrial Installations

#### 5.1.1 New or Proposed Installations for which an Air Quality Assessment has been carried out

Construction work has commenced on a large centre that will sort co-mingled recycled waste at Norton juxta Kempsey near Worcester and a new landfill site at Whitlence Lane, Hartlebury, Kidderminster, a former quarry from which clay was extracted for use in adjacent brickworks.

PM<sub>10</sub> emissions for both developments have been assessed and they are not considered to present a risk of exceedences of the objectives when they start operations. When these sites are in use further assessments will be carried out.

Development of an extension to the Vale Park Industrial Estate off the A44 Evesham Bypass has commenced. An air quality assessment indicated that it will not have a significant impact on the air quality in the immediate area or the Port Street AQMA.

Wychavon District Council has assessed new/proposed industrial installations, and concluded that it will not be necessary to proceed to a Detailed Assessment.

#### 5.1.2 Existing Installations where emissions have increased substantially or New Relevant Exposure has been introduced

Wychavon District Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

#### 5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

Wychavon District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

### 5.2 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) storage depots within the Local Authority area.

### 5.3 Petrol Stations

Four permitted petrol filling stations in Wychavon have closed and the sites are to be redeveloped.

Wychavon District Council confirms that there are no petrol stations meeting the specified criteria.

## **5.4 Poultry Farms**

Wychavon District Council confirms that there are no poultry farms meeting the specified criteria.

## **6 Commercial and Domestic Sources**

### **6.1 Biomass Combustion – Individual Installations**

Wychavon District Council confirms that currently there are no biomass combustion plant in the Local Authority area.

### **6.2 Biomass Combustion – Combined Impacts**

The only biomass combustion plants in Wychavon District Council that we are aware of are domestic appliances at dwellings that have been the subject of complaints of smoke nuisance. The numbers have been very low and it is not considered that there no 500 x 500m square locations where the PM<sub>10</sub> concentrations are close to above the objectives.

Wychavon District Council has assessed the biomass combustion plant, and concluded that it will not be necessary to proceed to a Detailed Assessment.

### **6.3 Domestic Solid-Fuel Burning**

Wychavon District Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

## **7 Fugitive or Uncontrolled Sources**

Currently there are no new sources of fugitive or uncontrolled sources of PM<sub>10</sub>. The previously identified landfills and clay quarries continue to operate, but in the case of the clay quarries at a lower level of activity because of the economic slow down.

Works have commenced to bring into use a new landfill site in a disused clay quarry adjacent to the Wienerberger Ltd (formerly Baggeridge Brick) Hartlebury factory and in future assessments we will need to consider whether it has had an impact on air quality.

Wychavon District Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

## **8 Conclusions and Proposed Actions**

### **8.1 Conclusions from New Monitoring Data**

The results of the nitrogen dioxide diffusion tube monitoring during 2008 show that the annual mean objective is being exceeded at the triple roadside sites EPS2, EPS3, EPS4 nr Swan Whittington, at EPS 27, EPS28, EPS29 Worcester Road Wychbold and the kerbside site EPS14, EPS14a, EPS14b Port Street Evesham.

When the results are adjusted for distance from the monitoring site to the nearest residential building façade, using the calculator on the review and assessment help desk the outcomes are as follows.

There is an exceedence of the annual mean at EPS2, EPS3, EPS4 at Whittington (Appendix B figure 3) and therefore a detailed assessment is required.

Site EPS14, EPS14a, EPS14b Port Street Evesham (Appendix B figure 1) is within the declared AQMA, the current level appears to be below the objective. This site has in the past shown the highest nitrogen dioxide levels within the AQMA, therefore whilst work will continue on the preparation of the action plan if results continue to be below the objective consideration will be given to un-declaring the AQMA.

The result from EPS27, EPS28, EPS29 Wychbold (Appendix B figure 4) is below the objective, but monitoring will continue and attempts will be made to locate tubes on the façade of the nearest receptor rather than at the roadside site. The effect of the traffic lights recently by the Highways Agency on the northern slip road from the M5 may have an impact on the nitrogen dioxide concentration as it appears to be increasing the queuing traffic on the A38 in front of residential properties.

### **8.2 Conclusions from Assessment of Sources**

The updating and screening assessment has not identified any new or significantly changed sources of Benzene, 1-3 Butadiene, Carbon Monoxide, Lead, Sulphur Dioxide and Particulates (PM<sub>10</sub>) are unlikely to be exceeded. that will result in exceedences of the objectives.

In most of Wychavon District Council the objectives for Nitrogen Dioxide are unlikely to be exceeded, however concern remains in respect of the two hot spots that have been previously identified in Whittington and Wychbold and the AQMA in Port Street Evesham,

The draft South Worcestershire Joint Core Strategy has identify new sites for residential, commercial and industrial development up to the year 2026 some of the proposed sites that may have an impact on air quality and air quality assessments have been requested to assist in the consideration of which sites should be included in the final strategy.

### **8.3 Proposed Actions**

In most of Wychavon District Council no further action is required until the Progress Report in 2010.

The concerns in respect of the two hot spots that have been identified will be addressed as follows

1. A detailed assessment will be carried out for the section of the A44 between junction 7 of the M5 and the A4440 at Whittington where there may be an exceedence of the annual mean for nitrogen dioxide at the building facade of at least one property.

## ***Wychavon District Council***

2. Although it is considered that the annual mean for nitrogen dioxide is not currently being exceeded at the facades of the nearest residential properties at Junction 5 of the M5 and the A38 at Wychbold, the recent installation of traffic lights on the northern slip road appears to be increasing the queuing traffic on the A38 in front of the residential properties. It is therefore proposed to seek the co-operation of residents to locate diffusion tubes on building façade of the nearest properties.

3. Although the diffusion tube monitoring results would suggest that at the receptors, the nitrogen dioxide levels may be below the annual mean objective, the Action Plan for the Port Street Evesham AQMA will continue to be developed.

## **9      References**

Wychavon District Council Air Quality Review and Assessment 2000

Wychavon District Council Air Quality Updating and Screening Assessment 2003

Wychavon District Council Air Quality Progress Report 2004

Wychavon District Council Air Quality Progress Report 2005

Wychavon District Council Air Quality Progress Report 2006

Wychavon District Council Air Quality Detailed Assessment 2007

Assessment of Air Quality within the Evesham AQMA September 2008 (prepared by AQM Air Quality Consultants)

Wychavon District Council Air Quality Progress Report 2008

Local Air Quality Management Technical Guidance LAQM.TG (09)



# **Appendices**

Appendix A: QA/QC Data

Appendix B: DIFFUSION TUBES SITES

Appendix C **NITROGEN DIOXIDE DIFFUSION TUBE MONTHLY MEAN  
CONCENTRATIONS IN UG/M<sub>3</sub> 2008**

# Appendix A: QA:QC Data

## Diffusion Tube Bias Adjustment Factors

The diffusion tubes are supplied and analysed by Gradko International Ltd using 20% TEA/water. The bias factor from the 11 studies in 2008 on national spreadsheet is 0.92. The laboratory's precision result for this method was good for 2008.

The bias factors applied to the results in 2007 of 0.89 and 2008 of 0.92 are derived from the national studies.

Summary of Precision Results for Nitrogen Dioxide Diffusion Tube Collocation Studies, by Laboratory

Aberdeen		Bristol SS		Cardiff SS		Caerthorpe / GMBSS / Casella CRE / Bureau Veritas Labs / Eurofins		Clyde Analytical Laboratories		Dundee CCI Tayside SS		Edinburgh SS		Glasgow SS		Gradko 20% TEA in Water		Gradko 50% TEA in Acetone		Gradko 90% TEA in Water		Harwell SS		Jasmond Dene Labs			
2007	g	2007	g	2007	g	2007	p	2007	g	2007	g	2007	p	2007	g	2007	g	2007	g	2007	g	2007	g	2007	g	2007	g
2008	g	2007	g	2008	g	2007	p	2008	p	2007	g	2007	p	2007	g	2007	g	2007	g	2007	g	2007	g	2007	g	2007	g
		2007	g	2008	p	2007	p			2005	g	2007	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
		2007	g	2008	p	2007	p			2008	g	2007	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
		2007	g	2008	p	2007	p			2008	g	2007	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
		2008	g			2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
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						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
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						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
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						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	2007	g	2007	g	2008	g	2007	g	2007	g
						2007	p					2008	g	2007	g	2007	g	200									

APPENDIX B: DIFFUSION TUBE LOCATIONS

Figure 1 NO<sub>2</sub> Diffusion Tubes Port Street Evesham

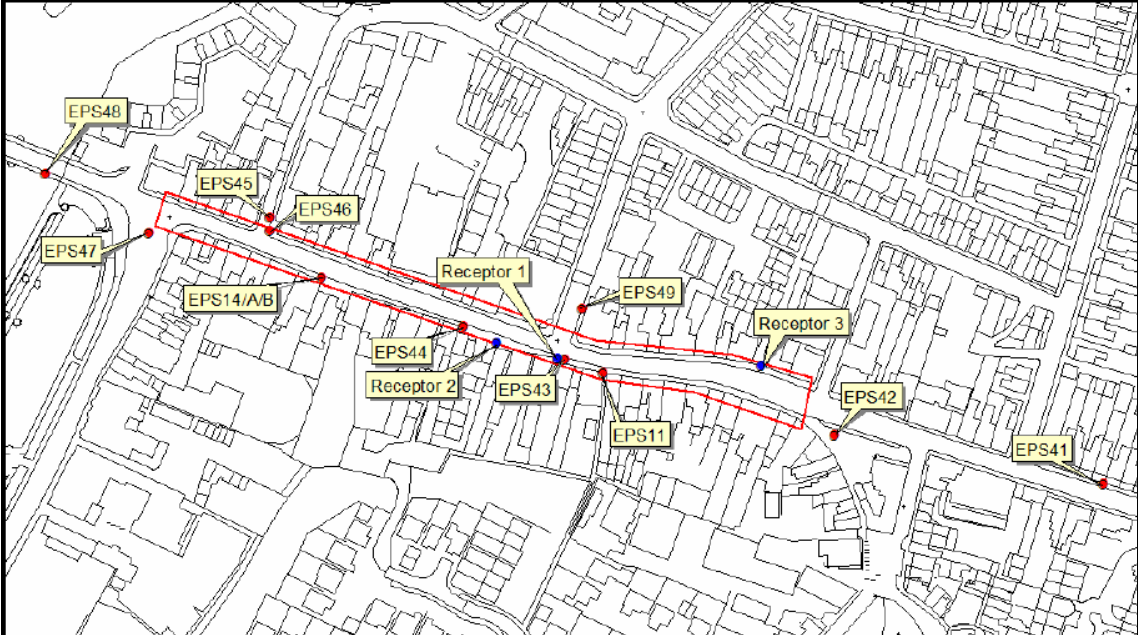




Figure 2 NO<sub>2</sub> Diffusion Tubes Port Street Evesham

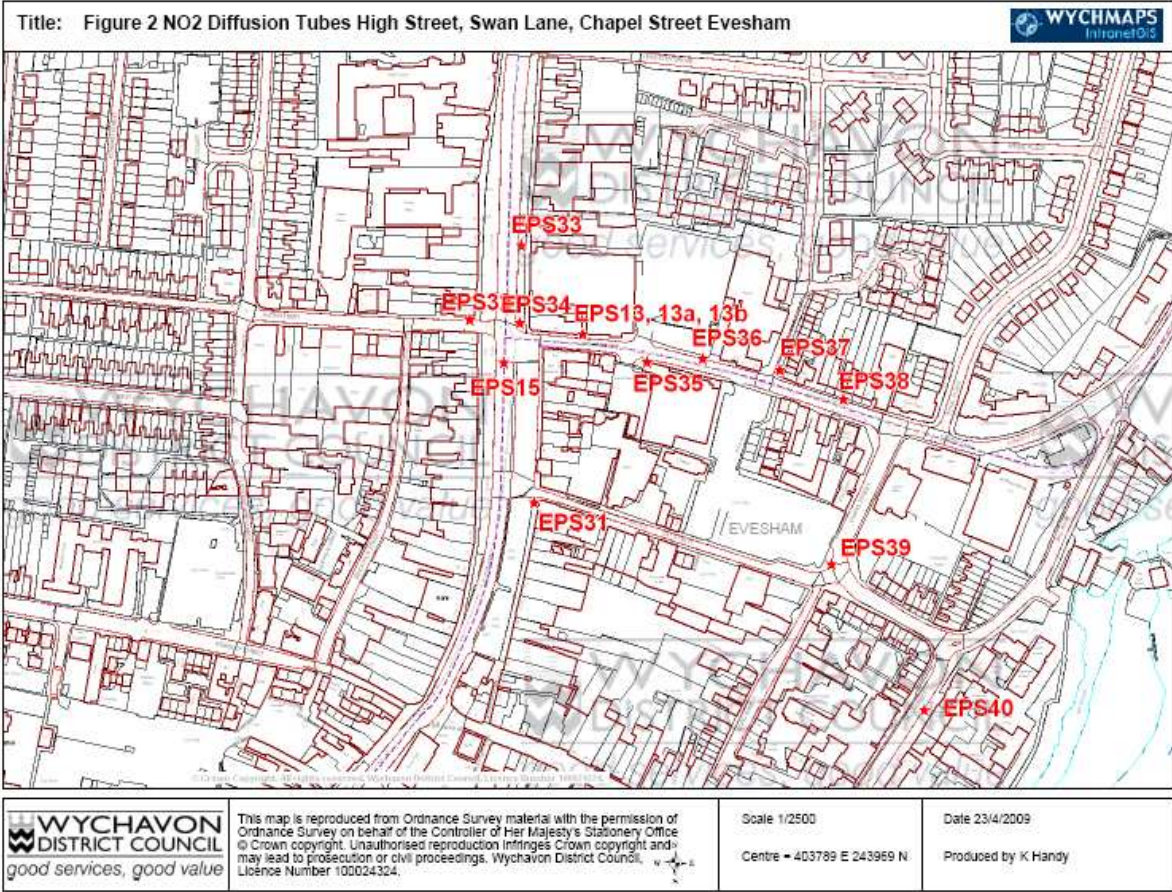




Figure 3 NO<sub>2</sub> Diffusion Tubes Whittington

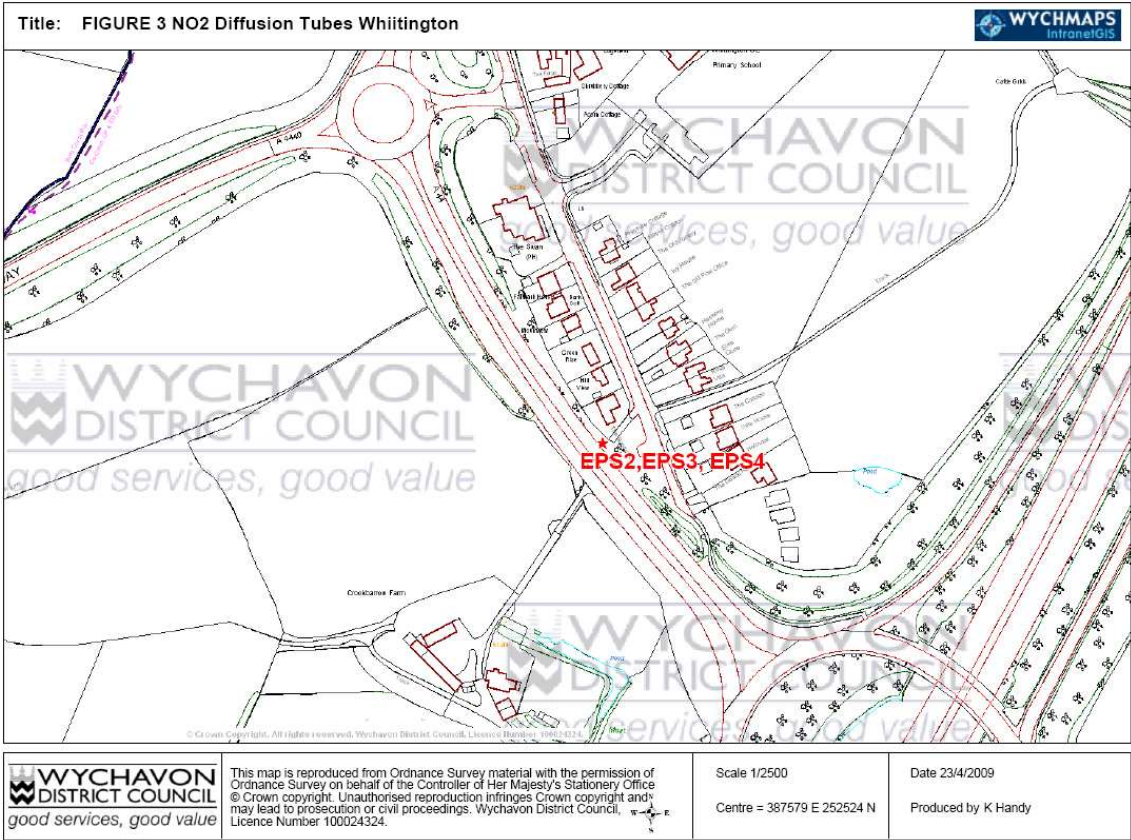
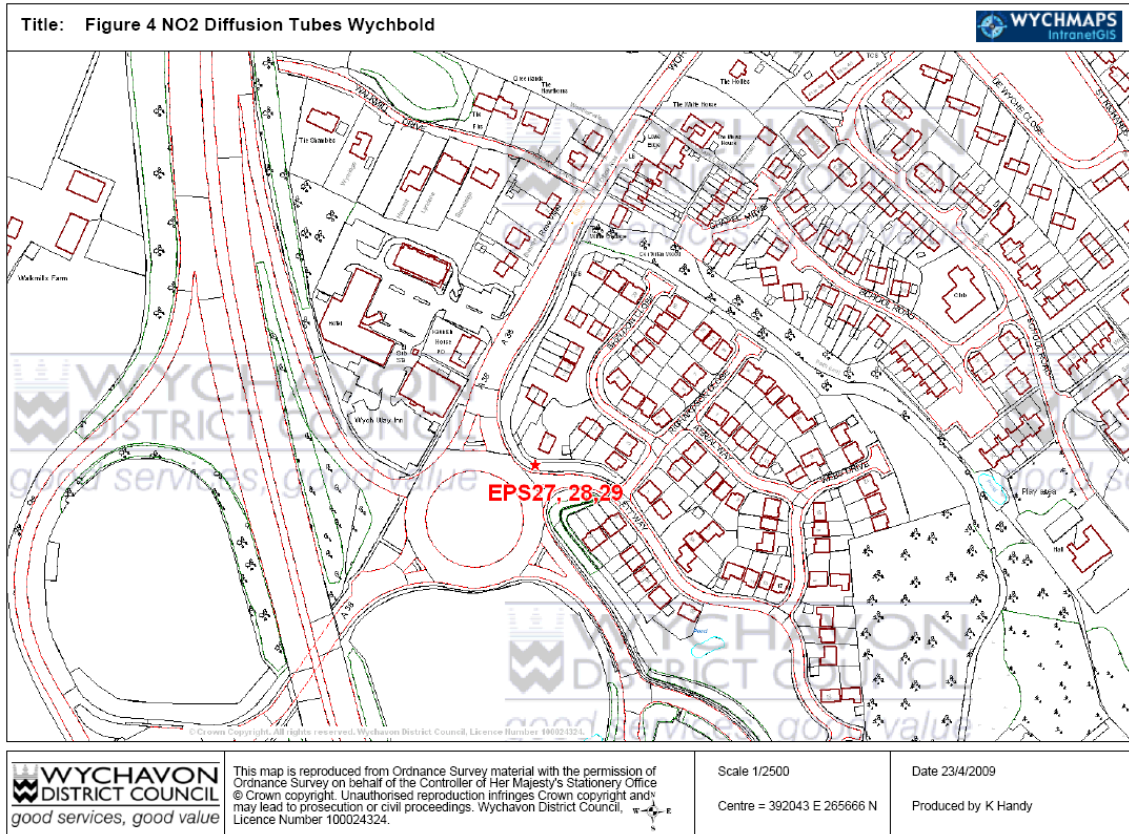


Figure 4 NO<sub>2</sub> Diffusion Tubes Wychbold



**APPENDIX C NITROGEN DIOXIDE DIFFUSION TUBE MONTHLY MEAN CONCENTRATIONS IN UG/M<sub>3</sub> 2008**

			Jan	Feb	March	April	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Average	Bias	Result	
EPS1	Norton	Church Lane	33.15	41.54	33.09	32.90	26.81	37.91	31.08	29.76		34.33	43.93		34.45	0.92	31.69	
EPS2	Whittington	Nr Swan (LP 50)	59.29	68.55	52.22	61.56	58.90	57.93	54.60	50.90	46.33	65.64	65.36	39.92	56.77	0.92	52.23	
EPS3	Whittington	Nr Swan (LP 50)	65.39	62.74	55.04	56.48	63.17	57.50	56.95	60.69	55.2	57.25	67.52	68.65	60.55	0.92	55.70	
EPS4	Whittington	Nr Swan (LP 50)	58.90	68.32	46.84	60.13	68.62	52.74	58.87	50.65	63.86	56.98	66.85	61.02	59.48	0.92	54.72	54.22
EPS5	Swinesherd	Homeleigh	40.26	40.86	37.06	32.56		22.87	27.89	27.53	22.55	36.81	43.59		33.20	0.92	30.54	
EPS6	Pershore	Civic Centre	32.27	39.88	23.89	22.43	15.03	16.12	13.15		20.77	29.04	31.74		24.43	0.92	22.48	
EPS7	Pershore	High Street	32.70	41.41	29.46	33.18	24.80	27.67	25.49	18.66	28.23	31.33	38.79	40.30	31.00	0.92	28.52	
EPS8	Pershore	40 High Street	39.53	44.63	44.81	40.25	24.93	31.78	27.09	29.92	20.89	37.02			34.09	0.92	31.36	
EPS9	Pershore	St. Andrews Road	17.31	29.29	16.69	15.61	13.39	9.93	31.62	11.46	15.43	10.75	23.92	23.45	18.38	0.92	16.91	
EPS10	Pershore	Broad Street	35.23	43.40	33.63	37.06	31.32	26.29	26.37	22.40	32.29	31.15	35.91	40.74	32.98	0.92	30.34	
EPS16	Droitwich	Omersley Street East	32.07	48.92	28.54	39.32	35.62	29.27	26.68	27.70	33.46	27.34	36.76	40.34	33.84	0.92	31.13	
EPS17	Droitwich	St. Andrews Road	53.21	39.83		32.58	24.03	25.59		20.43	27.52		34.04	40.67	33.10	0.92	30.45	
EPS18	Droitwich	Hanbury Road (LP34)	35.92	45.13		38.04	45.65	26.93	28.35	26.72	11.34		33.06	36.14	32.73	0.92	30.11	
EPS19	Droitwich	Mayflower Road (1)	33.41	57.69	30.78	54.82	90.03	28.37	31.73	29.47	49.25	30.36	44.10	44.84	43.74	0.92	40.24	
EPS20	Droitwich	Mayflower Road (2)	36.29	57.91	27.43	54.82	93.70	32.99	35.76	27.27	39.58	32.22	37.50	38.82	42.86	0.92	39.43	
EPS21	Droitwich	Mayflower Road (3)	13.66	54.28	28.71	53.35	73.12	34.90	38.84	25.71	43.8	33.28	40.64	44.23	40.38	0.92	37.15	38.94
EPS22	Droitwich	Tagwell Close	30.96	42.71	28.00	42.57	62.01	27.72	24.20	20.67	36.78	22.91	34.04	38.41	34.25	0.92	31.51	
EPS23	Droitwich	Tagwell Close (LP4)	26.26	48.60	25.14	43.25	62.26	33.58	27.50	20.66	35.68	24.96	43.56	40.59	36.00	0.92	33.12	
EPS24	Droitwich	Tagwell Close (LP4)	33.76	46.40	27.56	40.86	69.18	29.25	25.99	19.08		27.73	42.01	42.91	36.79	0.92	33.85	
EPS25	Droitwich	Westlands		65.29	30.64	55.33	66.12		48.27	37.32	43.87	58.38	50.87	71.90	52.80	0.92	48.58	
EPS26	Wychbold	A38 Road	65.34	72.58	24.03	60.88	66.63	71.55	52.38	49.60	55.43	69.32	76.60	59.64	60.33	0.92	55.51	
EPS27	Wychbold	Worcester Road (1)	81.19	80.07	55.60	63.82	43.12	61.99	56.43	52.36	42.87	72.16	62.41	61.27	61.11	0.92	56.22	
EPS28	Wychbold	Worcester Road (2)	78.75	79.30	21.65	62.47	40.73	53.14	39.27	57.09	51.22	63.26	65.35	60.44	56.06	0.92	51.57	
EPS29	Wychbold	Worcester Road (3)	65.94	62.44	24.91	59.66	44.53	58.52	45.05	52.61	44.92	61.34	68.84	60.04	54.07	0.92	49.74	52.51
EPS50	Norton	Merryfields House	22.39	29.57	12.11	18.16	15.25	14.82	12.47	11.55	16.6	18.61	45.43	33.45	20.87	0.92	19.20	
EPS51	Norton	Sangia	35.89		41.35	19.79	15.08	15.79	16.76	15.66	22.49	20.72	29.53	28.06	23.74	0.92	21.84	



**Wychavon District Council**

			Jan	Feb	March	April	May	Jun	July	Aug	Sept	Oct	Nov	Dec	average	Bias	Result	
EPS13	Evesham	Swan Lane	39.82	50.45	42.05	46.53	34.22	36.75	27.18	37.44	38.05	42.73	43.34	51.23	<b>36.11</b>	0.92	33.22	
EPS13a	Evesham	Swan Lane	39.64	58.27	41.19	39.80	36.53	40.51	32.44	36.91	28.26	39.21	53.95	52.74	<b>40.77</b>	0.92	37.51	
EPS13b	Evesham	Swan Lane	46.27	52.02	36.54	45.25	35.31	34.33	27.96	32.10	43.35	45.60	55.58	54.28	<b>33.19</b>	0.92	30.53	33.75
EPS15	Evesham	High Street	41.36	51.07	40.98	41.76	34.18	42.22	34.26	38.92	35.40	47.98	52.10	52.36	<b>29.26</b>	0.92	26.92	
EPS31	Evesham	High Street LP28	35.97	50.61	40.64	37.06	34.92	31.21	30.36	26.94	31.24	37.07	86.28	44.28	<b>25.73</b>	0.92	23.67	
EPS32	Evesham	Avon Street LP 11	35.11	49.04	32.71	42.38	36.78	29.58	27.02	31.64	26.09	40.06	42.90	38.87	<b>27.04</b>	0.92	24.88	
EPS33	Evesham	High Street LP32	34.37	51.63	32.46	36.08	46.73	34.58	25.46	30.31	31.78	33.85	41.47	34.59	<b>24.64</b>	0.92	22.67	
EPS34	Evesham	High Str/ Swan La Camera	39.39	53.20	38.96	44.27	61.00	28.40	28.80	33.71	33.79		47.34	39.59	<b>29.27</b>	0.92	37.51	
EPS35	Evesham	Swan Lane LP 2	33.82	46.84	31.08	26.54	32.48	20.85	27.12	31.66	36.52	36.95	36.70	37.72	<b>33.19</b>	0.92	30.53	
EPS36	Evesham	Swan Lane LP 3	27.81	43.63	24.54	25.19	26.39	19.07	23.80	22.17	32.19	29.11	40.29	36.98	<b>29.26</b>	0.92	26.92	
EPS37	Evesham	Cowl Street	22.49	38.19	22.10	28.44	29.91	25.78	18.26	18.97	20.46	22.53	35.91		<b>25.73</b>	0.92	23.67	
EPS38	Evesham	Swan Lane LP 5	25.55	38.01	26.00	27.08	27.51	18.71	20.84	20.23	22.79	30.05	38.36	29.34	<b>27.04</b>	0.92	24.88	
EPS39	Evesham	Chapel Strret LP 1	24.87	32.09	23.59	23.66	18.67	22.11	21.32	21.33	19.84		32.43	31.12	<b>24.64</b>	0.92	22.67	
EPS40	Evesham	Mill Street LP 4	31.86	36.44	26.24	28.20	25.48	34.57	22.95	22.07	23.37	28.82	36.02	35.25	<b>29.27</b>	0.92	26.93	

Wychavon District Council

			Jan	Feb	March	April	May	Jun	July	Aug	Sept	Oct	Nov	Dec	average	Bias	Result	
EPS11	Evesham	Port Street	40.73	54.02	40.06	48.93	46.32	42.81	25.62	36.28	38.08				<b>41.43</b>	0.92	38.11	
EPS14	Evesham	Port Street	47.84	50.13	43.93	47.59	41.60	44.47	43.97		29.75	44.86	43.05	54.70	<b>44.72</b>	0.92	41.14	
EPS14a	Evesham	Port Street	45.20	54.75	49.87	48.75	37.28	40.51	38.33	41.69	42.52	52.06	47.49	51.19	<b>45.80</b>	0.92	42.14	
EPS14b	Evesham	Port Street	50.59	55.65	38.04	49.79	39.68	42.99	44.71	44.75	29.64		54.04	53.18	<b>45.73</b>	0.92	42.07	41.78
EPS41	Evesham	Port Street LP21	33.38	48.55	35.28	42.50	53.18	38.95	31.46	24.29	42.80			41.45	<b>39.18</b>	0.92	36.05	
EPS42	Evesham	Port Street LP40	32.52	43.54	29.35	36.09	34.20				89.17	25.44	39.47	43.42	<b>41.47</b>	0.92	38.15	
EPS43	Evesham	Long Stay opp cinema	37.36	49.73	43.59	40.61	44.02	35.92	41.77	26.02	30.24	32.27	44.97	52.86	<b>39.95</b>	0.92	36.75	
EPS44	Evesham	Camera Post opp 33	34.97	52.44	39.41		38.42	24.48	41.53	33.96	40.41	43.88	45.64	43.60	<b>39.89</b>	0.92	36.69	
EPS45	Evesham	Castle Street LP1	35.28	38.02		29.97	28.15	23.17	24.50	25.80	23.00	25.64	36.48	36.04	<b>29.64</b>	0.92	27.27	
EPS46	Evesham	Castle Str 20 mph sign	34.85	40.33	30.76	31.44	23.01	40.14	28.55	29.42	20.08	33.76	31.39	29.15	<b>31.07</b>	0.92	28.59	
EPS47	Evesham	Waterside centre RES	40.19	47.76	37.82	35.96	34.88	17.04	38.77	36.12	25.49		38.81	45.65	<b>36.23</b>	0.92	33.33	
EPS48	Evesham	LP63 on bridge	26.83	34.46	23.88	24.96	29.52	25.68	21.24	19.03	23.65	22.28	31.77	24.57	<b>25.66</b>	0.92	23.60	
EPS49	Evesham	Burford Road LP12	34.36	43.14		27.34	31.59	19.85	26.12	18.06	30.88	28.69	38.75	47.94	<b>31.52</b>	0.92	29.00	